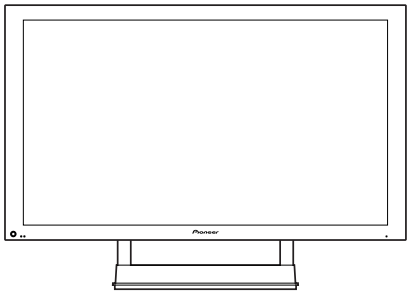
Pioneer sound.vision.soul

Service Manual



PDP-5071PU

ORDER NO.
ARP3354

PLASMA DISPLAY SYSTEM

PDP-5071PU
PDP-5070PU

THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

Model	Type	Power Requirement	Remarks
PDP-5071PU	KUCXC	AC 120 V	
PDP-5070PU	KUCXC	AC 120 V	

For details, refer to "Important Check Points for good servicing".

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1. NOTES ON SERVICE VISIT

1.1 SAFETY INFORMATION

This service manual is intended for qualified service technicians ; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

WARNING
This product contains lead in solder and certain electrical parts contain chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm.

Health & Safety Code Section 25249.6 - Proposition 65

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols (fast operating fuse) and/or (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible (fusible de type rapide) et/ou (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

SAFETY PRECAUTIONS

NOTICE : Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis.

The following precautions should be observed :

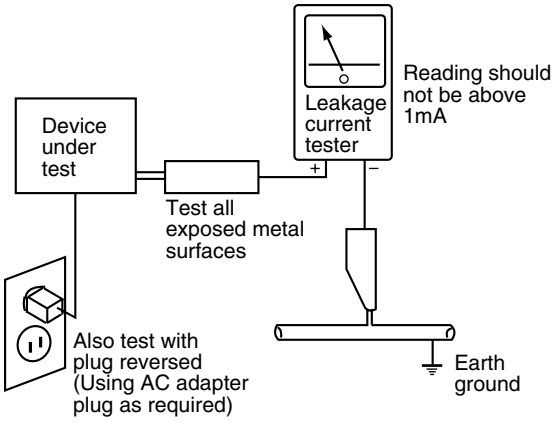
1. When service is required, even though the PDP UNIT an isolation transformer should be inserted between the power line and the set in safety before any service is performed.
2. When replacing a chassis in the set, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment covershields, isolation resistor-capacitor, etc.
3. When service is required, observe the original lead dress. Extra precaution should be taken to assure correct lead dress in the high voltage circuitry area.
4. Always use the manufacture's replacement components. Especially critical components as indicated on the circuit diagram should not be replaced by other manufacture's. Furthermore where a short circuit has occurred, replace those components that indicate evidence of overheating.
5. Before returning a serviced set to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the set by the manufacture has become defective, or inadvertently defeated during servicing. Therefore, the following checks should be performed for the continued protection of the customer and servicetechnician.
6. Perform the following precautions against unwanted radiation and rise in internal temperature.
   - Always return the internal wiring to the original styling.
   - Attach parts (Gascket, Ferrite Core, Ground, Rear Cover, Shield Case etc.) surely after disassembly.
7. Perform the following precautions for the PDP panel.
   - When the front case is removed, make sure nothing hits the panel face, panel corner, and panel edge (so that the glass does not break).
   - Make sure that the panel vent does not break. (Check that the cover is attached.)
   - Handle the FPC connected to the panel carefully. Twisting or pulling the FPC when connecting it to the connector will cause it to peel off from the panel.
8. Pay attention to the following.
   - Pay extreme caution when the front case and rear panel are removed because this may cause a high risk of disturbance to TVs and radios in the surrounding.

Leakage Current Cold Check

With the AC plug removed from an AC power source, place a jumper across the two plug prongs. Turn the AC power switch on. Using an insulation tester (DC 500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (input/output terminals, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis. Exposed metal parts having a return path to the chassis should have a minimum resistor reading of 4MΩ. The below 4MΩ resistor value indicate an abnormality which require corrective action. Exposed metal parts not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into an AC power source (do not use an isolation transformer for this check).
Turn the AC power switch on.
Using a "Leakage Current Tester (Simpson Model 229 equivalent)", measure for current from all exposed metal parts of the cabinet (input/output terminals, screwheads, metal overlays, control shaft, etc.), particularly any exposed metal part having a return path to the chassis, to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 1mA.


Reading should not be above 1mA
Leakage current tester
+
–
Device under test
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE SET TO THE CUSTOMER.

PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in PIONEER set have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.
Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire or other hazards.
Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

■ Charged Section

The places where the commercial AC power is used without passing through the power supply transformer.
If the places are touched, there is a risk of electric shock. In addition, the measuring equipment can be damaged if it is connected to the GND of the charged section and the GND of the non-charged section while connecting the set directly to the commercial AC power supply. Therefore, be sure to connect the set via an insulated transformer and supply the current.

1. Power Cord
2. AC Inlet
3. Power Switch (S1)
4. Fuse (In the POWER SUPPLY Unit)
5. STB Transformer and Converter Transformer (In the POWER SUPPLY Unit)
6. Other primary side of the POWER SUPPLY Unit

■ High Voltage Generating Point

The places where voltage is 100 V or more except for the charged places described above. If the places are touched, there is a risk of electric shock.
The VSUS voltage remains for several minutes after the power to the unit is turned off. These places must not be touched until about 10 minutes after the power is turned off, or it is confirmed with a tester that there is no residual VSUS voltage.

If the procedures described in “10.3 POWER ON/OFF FUNC--TION FOR THE LARGE-SIGNAL SYSTEM” are performed before the power is turned off, the voltage will be discharged in about 30 seconds.

POWER SUPPLY UNIT .....(205 V)
50 X MAIN DRIVE Assy.....(–180 V to 205 V)
50 X SUB DRIVE Assy.....(–180 V to 205 V)
50 Y MAIN DRIVE Assy.....(500 V)
50 Y SUB DRIVE Assy.....(350 V)
50 SCAN A Assy.....(500 V)
50 SCAN B Assy.....(500 V)

: Part is Charged Section.

: Part is the High Voltage Generating Points other than the Charged Section.

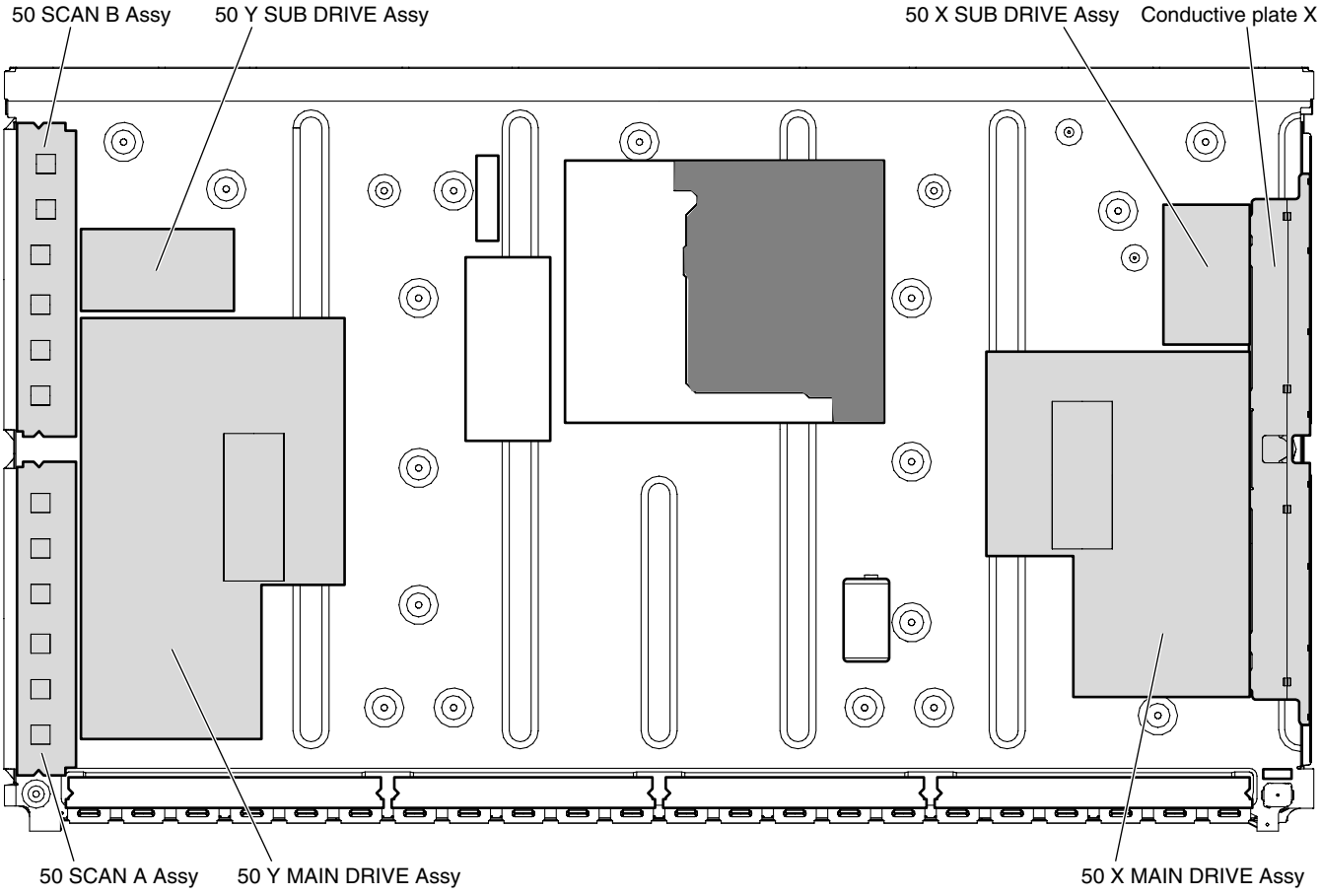

50 SCAN B Assy
50 Y SUB DRIVE Assy
50 X SUB DRIVE Assy
Conductive plate X
50 SCAN A Assy
50 Y MAIN DRIVE Assy
50 X MAIN DRIVE Assy

Fig.1 High Voltage Generating Point (Rear view)

[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety

Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments

To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts

Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning

For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws

To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

Quick Reference upon Service Visit ①
Notes, PD/SD diagnosis, and methods for various settings

Notes when visiting for service

1. Notes when disassembling/reassembling

① **Rear case**
When reassembling the rear case, the screws must be tightened in a specific order. Be careful not to tighten them in the wrong order forcibly. For details, see "Rear Case" in "6. DISASSEMBLY"

② **Attaching screws for the HDMI connector**
When attaching the HDMI connector after replacing the Main Assy, secure the HDMI connector manually with a screwdriver, but not with an electric screwdriver. If you tighten the screws too tightly with an electric screwdriver, the screw heads may be damaged, in which case the screws cannot be untightened/tightened any more.

2. On parts replacement

① **How to discharge before replacing the Assys**
A charge of significant voltage remains in the Plasma Panel even after the power is turned off. Safely discharge the panel before replacement of parts, in either manner indicated below:
A: Let the panel sit at least for 3 minutes after the power is turned off.
B: Turn the Large Signal System off before the power is turned off then, after 1 minute, turn the power off.
For details, see "10.2 Power ON/OFF Function for the Large-Signal System."

② **On the settings after replacement of the Assys**
Some boards need settings made after replacement of the Assys. For details, see "7. ADJUSTMENT"

3. On various settings

① **SR+**
After a repair using a PC, be sure to restore the setting for the RS-232C connector to SR+.

② **Setting in Factory mode**
After a Mask indication into the panel is performed, be sure to set the Mask setting to "OFF" then exit Factory mode.

PD/SD

	Item	No. of LEDs flashing: Red	Blue
Panel section	Communication with the panel drive IC		Blue 1
	Communication with the module IIC		Blue 2
	DIGTAL-RST2		Blue 3
	Panel high temperature		Blue 4
Main section	Audio		Blue 5
	Communication with the Module microcomputer		Blue 6
	Main 3-wire serial communication		Blue 7
	Main IIC communication		Blue 8
	Communication with the Main microcomputer		Blue 9
	FAN		Blue 10
	Unit high temperature		Blue 11
	Communication with the D-TUNER		Blue 12
	MTB-RST2/RST4		Blue 13
POWER		Red 2	
SCAN		Red 3	
SCN-5V		Red 4	
Y-DRIVE		Red 5	
Y-DCDC		Red 6	
Y-SUS		Red 7	
ADRS		Red 8	
X-DRIVE		Red 9	
X-DCDC		Red 10	
X-SUS		Red 11	
UNKNOWN		Red 15	

Change of settings

How to enter Factory mode using the supplied remote control unit

In the same way as with the remote control unit supplied with the 6th-generation model

How to enter Integrator mode using the supplied remote control unit

① Enter the Standby mode.
② Press [MENU].
③ Press [TV ⏻].

Release TRAP SW-ERR

① Enter the Factory mode.
② Select the INITIALIZE mode.
③ Hold [DISPLAY] pressed for at least 5 seconds.

How to switch UART ① (Integrator)

① Enter the Integrator mode.
② Display "OFF" using [➡].
③ Change the communication speed using [⬇], then [➡].

How to switch UART ② (During Standby)

① Enter the Standby mode.
② Hold [VOL +] or [VOL -] pressed for 3 seconds.
③ Hold [SPLIT] pressed for 3 seconds.
④-1 To set to 232C, press [ENTER].
⑤-2 To set to SR+, press [HOME MENU].

Note: If switching is completed successfully, the red LED will flash twice.
Note 1: Use a remote control unit supplied with the 6th-generation models or later.
Note 2: Do not hold a key pressed for more than 5 seconds.

How to locate several items on the Factory menu

{ } : Item on the Factory menu
[ ] : Key on the remote control unit
" " : Screen indication

1. Confirmation of accumulated power-on time and power-on count
Select {INFORMATION} then {HOUR METER}.
(After entering Factory mode, press [⬇] four times.)

2. Confirmation of the Power-down and Shutdown histories

① **Panel system**
PD: Select {PANEL FACTORY} then {POWER DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER], then press [⬇] three times.)
SD: Select {PANEL FACTORY} then {SHUT DOWN}.
(After entering Factory mode, press [MUTING] once, press [ENTER], then press [⬇] four times.)

② **Main Assy**
Select {INFORMATION} then {MAIN NG}.
(After entering Factory mode, press [⬇] three times.)

3. How to display the Mask indication

① **Mask indication in the panel side**
1. Select {PANEL FACTORY} then {RASTER MASK SETUP}.
(After entering Factory mode, press [MUTING] once, press [ENTER], then press [⬇] 8 times.)
2. Press [ENTER], then select a Mask indication, using [⬆] or [⬇].

② **Mask (SG screen) indication in the Main Assy (MAIN VDEC)**
1. Select either Input 1 or 2 or 4, to which no signal is input (black screen).
2. Select {INITIALIZE} then {SG MODE}. Press [⬅]. (After entering Factory mode, press [MUTING] three times, then press [⬇] once.) Then, the indication at the lower right of the screen changes from "OFF" to "ANA AD YCBCR".
3. You can change Mask patterns by pressing [⬇] to select {SG PATTERN} then using [⬅] or [➡].

Note: When you switch "SG MODE" routes, some displays become monochrome, as they are in Y-signal only mode.

Adjustments and Settings after replacement of the Assys (Procedures in Factory mode)

1. Digital Video Assy: Transfer of backup data
① Select {PANEL FACTORY}, {ETC}, then {BACKUP DATA}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [⬇] seven times, then press [ENTER].)
② Select {TRANSFER}, using [➡], then hold [SET] pressed for at least 5 seconds.
③ After transfer of backup data is completed, {ETC} is automatically selected, and the LED on the front panel returns to normal lighting.

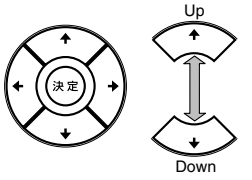
2. MAIN Assy (U): Execution of FINAL SETUP.
① Select {INITIALIZE} then {FINAL SETUP}, then press [ENTER]. (After entering Factory mode, press [MUTING] three times, then press [⬇] four times.)
② Select "YES", using [➡]. Then hold [ENTER] pressed for at least 5 seconds.
③ After "FINAL SETUP IS COMPLETE" is displayed on the screen, turn the POWER switch of the main unit off.

3. POWER SUPPLY Unit: Clearance of the accumulated power-on count and maximum temperature value
① Select {PANEL FACTORY}, {ETC}, then {P COUNT INFO}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [⬇] seven times, press [ENTER], then press [⬇] six times.)
② Press [➡] to select "CLEAR". Hold [SET] pressed for at least 5 seconds.
After clearance is completed, "ETC" is automatically selected. Clear the maximum temperature value (MAX TEMP) in the same manner.

4. Other Assys: Clearance of the maximum temperature value
① Select {PANEL FACTORY}, {ETC}, then {MAX TEMP}. (After entering Factory mode, press [MUTING] once, press [ENTER], press [⬇] seven times, press [ENTER], then press [⬇] seven times.)
② Press [➡] to select "CLEAR". Hold [SET] pressed for at least 5 seconds.
After clearance is completed, "ETC" is automatically selected.

Quick Reference upon Service Visit ②
Mode transition and structure of layers in Service Factory mode

Mode transition in Service Factory mode



- To shift to another mode, press [MUTING].
- To shift to another item in a specific mode, press [⬆] or [⬇].
- To shift to the next nested layer below for an item with a "(+)" indication, press [ENTER]. To return to the next nested layer above, also press [ENTER].

INFORMATION mode
1. VERSION (1)
2. VERSION (2), (3)
3. MAIN NG
4. TEMPERATURE
5. HOUR METER
6. HDMI SIGNAL INFO1, 2
7. VDEC SIGNAL INFO 2
8. DTV TUNING STATUS 1, 2, 3
9. DTV TV-GUIDE BER
10. DEBUG INFO

MUTING

INITIALIZE mode
1. SYNC DET
2. SG MODE
3. SG PATTERN
4. SIDE MASK LEVEL
5. FINAL SETUP
6. HMG/HG SERVICE MODE
7. CVT AUTO
8. HDMI INTR POSITION

MUTING

MUTING

PANEL FACTORY mode
1. PANEL INFORMATION
2. PANEL WORKS
3. POWER DOWN
4. SHUT DOWN
5. PANEL-1 ADJ
6. PANEL-2 ADJ
7. PANEL REVICE
8. ETC.
9. RASTER MASK SETUP
10. PATTEN MASK SETUP
11. COMBI MASK SETUP

MUTING

OPTION mode
1. EDID WRITE MODE
2. ANTENNA MODE
3. AFT

Structure of Layers in Service Factory Mode

INFORMATION mode	
├1. VERSION (1)	Flash Versions for PANEL system and MAIN system
├2. VERSION (2)	Flash Versions for DTV system
├3. VERSION (3)	Flash Versions for CCD ucom and HM
├4. MAIN NG	SD histories for MAIN (Going Clear model by SET key)
└4-1. CLEAR	Select Yes by [➡] key ➡ pushing and hold [SET] key
├5. TEMPERATURE	TEMP 1, TEMP2 and FAN mode are displayed
├6. HOUR METER	Hour meter and number of Power ON are displayed
└6-1. CLEAR	Select Yes by [➡] key ➡ pushing and hold [SET] key
├7. HDMI SIGNAL INFO 1	For factory use
├8. HDMI SIGNAL INFO 2	Signal info of HDMI are displayed (Detail are on SM)
├9. VDEC SIGNAL INFO	For factory use
├10. DTV TUNING STATUS 1	Detail information for DTV is displayed
├11. DTV TUNING STATUS 2	Detail information for DTV is displayed
├12. DTV TUNING STATUS 3	Detail information for DTV is displayed
├13. DTV TV-GUIDE BER	For production line use
├14. DEBUG INFO	For factory use
PANEL FACTORY mode	Refer to [PANEL FACTORY MODE]
OPTION	
├1. EDID WRITE MODE	For factory use
├2. ANTENNA MODE	For production line use
├3. AFT	For production line use
INITIALIZE	
├1. SYNC DET (+)	For factory use
├2. SG MODE	SG signal from MAIN VDEC (Composite signal is required)
├3. SG PATTERN	For factory use
├4. SIDE MASK LEVEL(+)	For factory use
├4-1. R MASK LEVEL	
├4-2. G MASK LEVEL	
└4-3. B MASK LEVEL	
├5. FINAL SETUP	Set to Factory default settings (it should perform after
└5-1. DATA RESET	replacing a MAIN board)
├6. HMG/HG SERVICE MODE	Information for a USB device is displayed
└6-1. MODE SIFT	
├7. CVT AUTO	For factory use
└8. HDMI INTR POSITION(+)	For factory use

Structure of Layers in Panel Factory Mode 1

1. PANEL INFORMATION	Version indication of the panel
2. PANEL WORKS	Indications of the accumulated power-on time, pulse-meter count, and power-on count of the panel
3. POWER DOWN	Indication of the Power-down history
4. SHUT DOWN	Indication of the Shutdown history
5. PANEL-1 ADJ (+)	
├1. X-SUS B	Modification not required because these items are basically for factory presetting
├2. Y-SUS B	
├3. Y-SUSTAIL T1	
├4. Y-SUSTAIL T2	
├5. Y-SUSTAIL W	
├6. XY-RST W1	
├7. XY-RST W2	
├8. VOL SUS	Settings required after replacement of the panel
├9. VOL OFFSET	
├10. VOL RST P	
└11. SUS FREQ.	For AM noise prevention (Depending on the mode, brightness of the screen changes.)
6. PANEL-2 ADJ (+)	
├1. R-HIGH	Parameters for the WB adjustment of the panel, which are required during adjustment after panel replacement
├2. G-HIGH	
├3 .B-HIGH	
├4. R-LOW	
├5. G-LOW	
├6. B-LOW	
└7. ABL	Setting of the power consumption. A setting table is available for each vertical signal.

To "Structure of Layers in Panel Factory Mode 2"

Structure of Layers in Panel Factory Mode 2

7. PANEL REVISE (+)	
├R-LEVEL	Items for use by engineers
├G-LEVEL	
└B-LEVEL	
8. ETC (+)	
├1. BACKUP DATA	For transferring backup data (after replacement of the DIGITAL Assy)
├2. DIGITAL EEPROM	To clear data of the digital video
├3. PD INFO.	For clearance of data for the corresponding items. The clearing method is the same: Select "CLEAR", using [➡], then hold [SET] pressed for at least 5 seconds. After clearance is completed, {ETC} is automatically selected.
├4. SD INFO.	
├5. HR-MTR INFO.	
├6. PM/B1-B5	
├7. P COUNT INFO.	
└8. MAX TEMP.	
9. RASTER MASK SETUP (+)	
├1. MASK OFF	For use while Raster Mask (full mask) is displayed. Use [⬆] or [⬇] to select the type of mask.
├2. RST MASK 01	
≈ • • • • •	
└25. RST MASK 24	
10. PATTEN MASK SETUP (+)	
├1. MASK OFF	For use while Pattern Mask is displayed. Use [⬆] or [⬇] to select the type of mask.
├2. PTN MASK 01	
≈ • • • • •	
└40. PTN MASK 39	
11. COMBI MASK SETUP (+)	
├1. MASK OFF	For use while Combination Mask is displayed. Use [⬆] or [⬇] to select the type of mask.
├2. CMB MASK 01	
≈ • • • • •	
└11. CMB MASK 10	

1.3 JIGS LIST

■ Cleaning

Name	Part No.	Remarks
Cleaning liquid	GEM1004	Used to fan cleaning. Refer to "2.4 CHASSIS SECTION (1/2).
Cleaning paper	GED-008	

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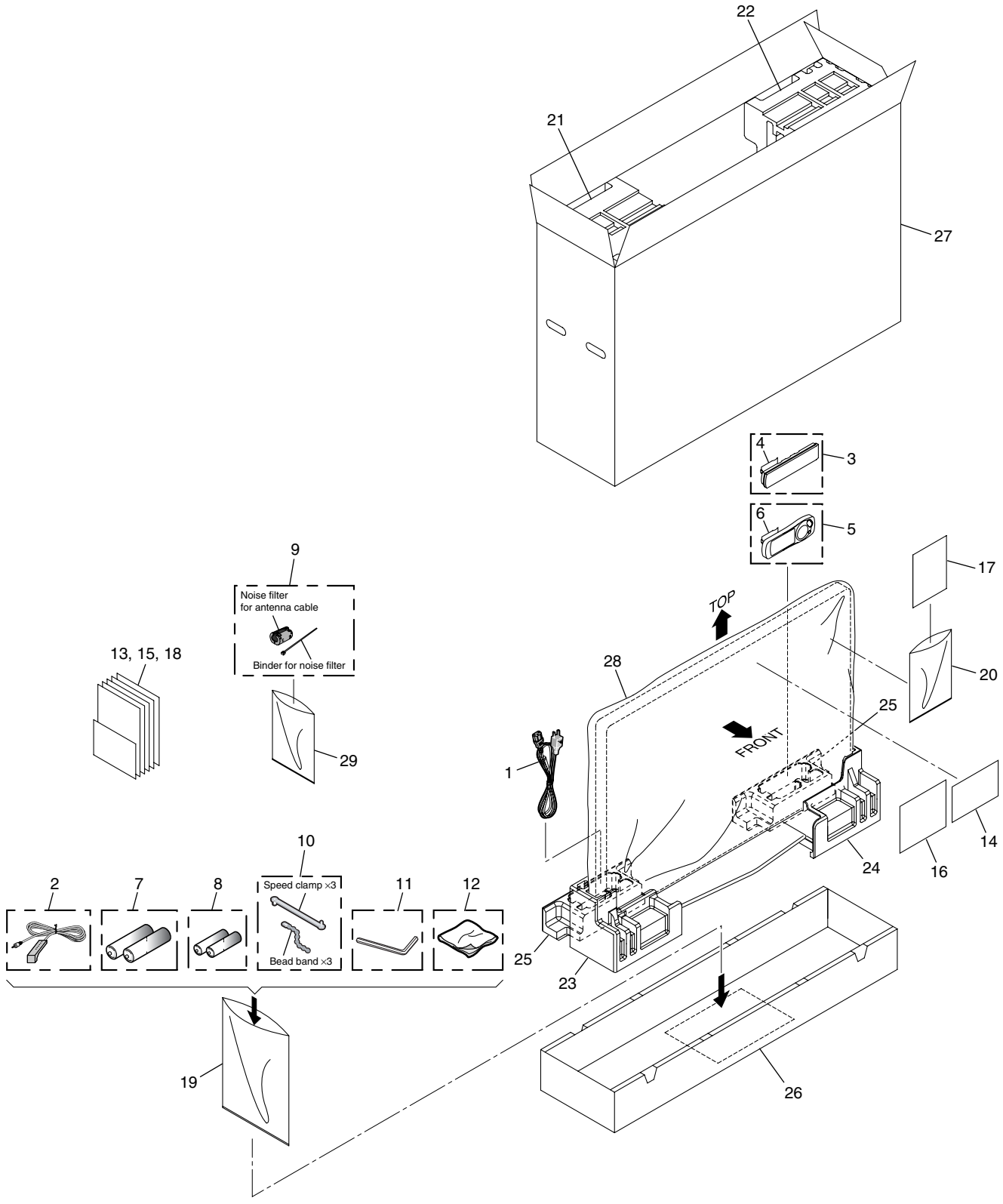
2. EXPLODED VIEWS AND PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *Screws adjacent to ▼ mark on product are used for disassembly.*
- *For the applying amount of lubricants or glue, follow the instructions in this manual. (In the case of no amount instructions, apply as you think it appropriate.)*

2.1 PACKING SECTION



(1) PACKING PARTS LIST

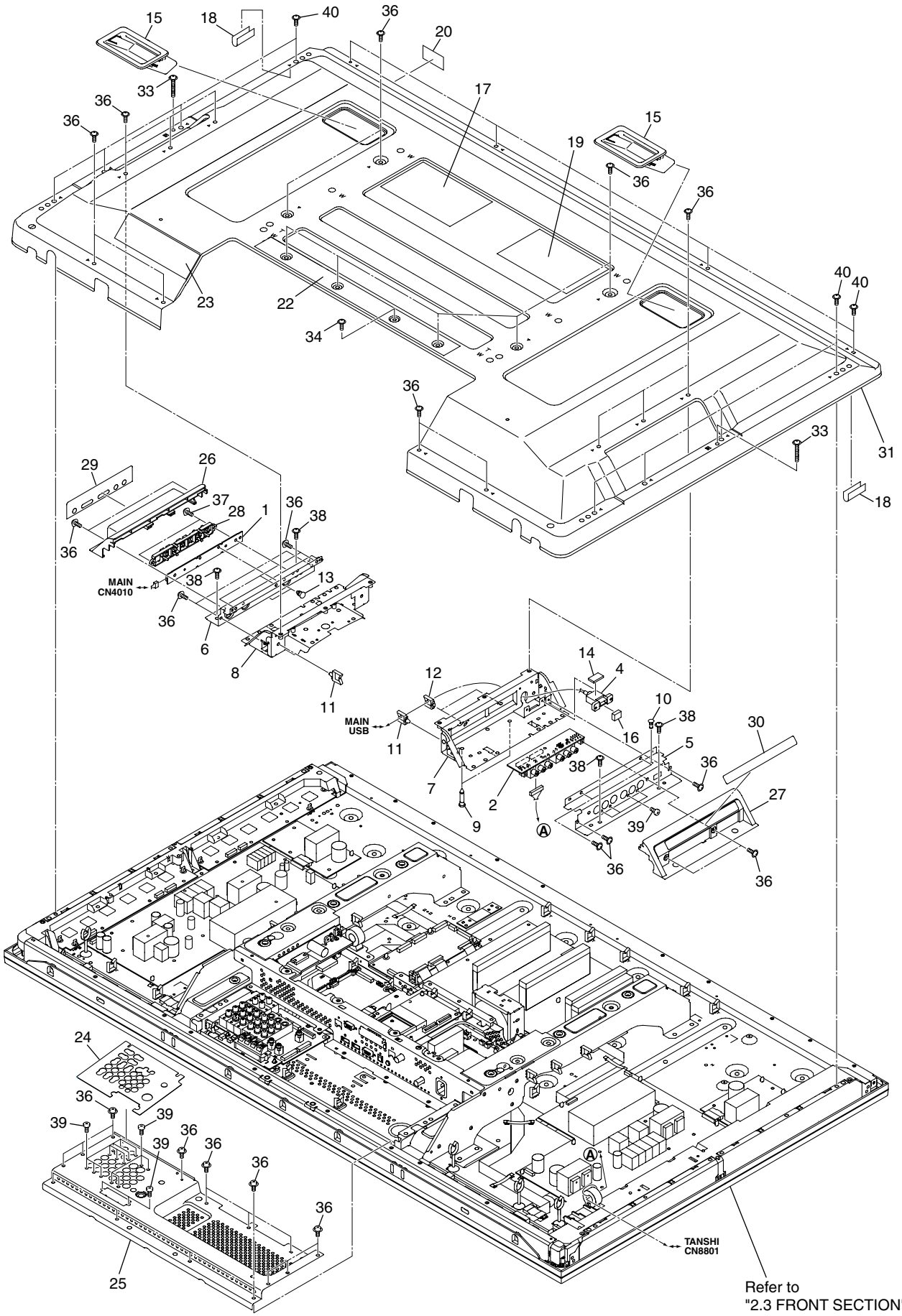
Mark	No.	Description	Part No.
⚠	1	Power Cord (2 m)	ADG1215
	2	G-LINK Cable (3 m)	VDX1010
	3	Remote Control Unit	AXD1536
	4	Battery Cover	AZN2680
	5	Simpled Remote Control Unit	See Contrast table (2)
	6	Battery Cover	See Contrast table (2)
NSP	7	Alkaline Dry Cell Battery (LR6, AA)	VEM1023
NSP	8	Dry Cell Battery (R03, AAA)	See Contrast table (2)
	9	Filter	CTX1054
	10	Binder Assy	AEC1908
NSP	11	Hexagonal Wrench (6 mm)	AEF1029
	12	Cleaning Cloth	AED1285
	13	Operating Instructions (English, French, Spanish)	ARE1426
	14	Caution Card	ARM1239
	15	Cleaning Caution (U)	ARM1303
	16	Accessory Caution	ARM1304
NSP	17	Warranty Card	ARY1196
NSP	18	Card (Register)	ARY1156
	19	Polyethlene Bag	AHG1394
	20	Vinyl Bag	AHG1347
	21	Pad (507REG. T-L)	AHA2571
	22	Pad (507REG. T-R)	AHA2572
	23	Pad (507REG. B-L)	AHA2573
	24	Pad (507REG. B-R)	AHA2574
	25	Pad (507EL. B-ACC.)	AHA2575
	26	Under Carton (507REG)	AHD3484
	27	Upper Carton (507REG)	See Contrast table (2)
	28	Packing Sheet L	AHG1389
	29	Polyethylene Bag S	AHG1395

(2) CONTRAST TABLE

PDP-5071PU/KUCXC and PDP-5070PU/KUCXC are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-5071PU /KUCXC	PDP-5070PU /KUCXC
	5	Simpled Remote Control Unit	AXD1539	Not used
	6	Battery Cover	AZN2682	Not used
NSP	8	Dry Cell Battery (R03, AAA)	VEM1036	Not used
	27	Upper Carton	AHD3485	AHD3523

2.2 REAR SECTION



(1) REAR SECTION PARTS LIST

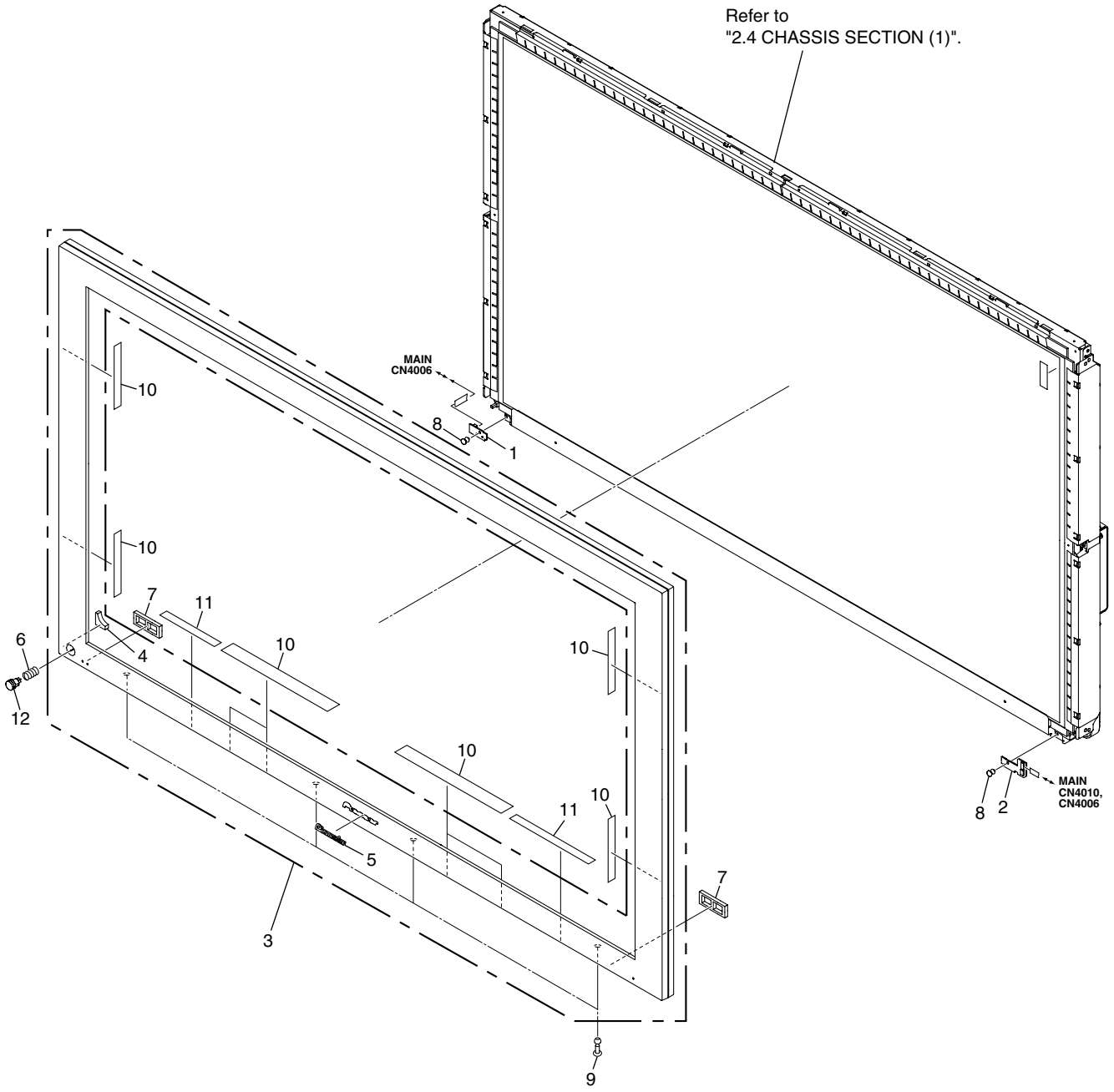
Mark	No.	Description	Part No.
	1	SIDE KEY Assy	AWW1133
	2	SIDE Assy	AWW1157
	3	• • • • •	
	4	USB Cable 120 cm (J301)	ADF1034
	5	Side Input Panel (U)	ANC2392
	6	Function Button Base	ANG2923
	7	Side Input Shield	ANK1834
	8	Function Button Shield	ANK1835
NSP	9	PCB Support	AEC1288
	10	PCB Spacer	AEC1570
	11	Wire Saddle	AEC1745
	12	Re-use Wire Saddle	AEC1945
	13	Locking Card Spacer	AEC2019
	14	USB Spacer	AED1310
	15	Inner Grip Assy	AMR3434
	16	Gasket (USB)	ANK1846
NSP	17	Name Label (507PU)	See Contrast table (2)
	18	Side Spacer 507	AED1311
	19	Bolt Caution Label	AAX3075
NSP	20	Serial Seal	AAX3182
	21	Side Spacer 507	AED1311
	22	Terminal Display Label A (U/B)	AAX3325
	23	Terminal Display Label C (U/B)	AAX3330
	24	Terminal Display Label B50 (U/B)	AAX3414
	25	Terminal Panel B (50U)	ANC2409
	26	Function Button Panel	AMB2906
	27	Side Input Cover	AMB2911
	28	Function Button	AAC1562
	29	Function Button Sheet (U)	AAK2895
	30	Input Cover Label U	AAX3363
	31	Rear Case (507)	ANE1656
	32	• • • • •	
	33	Screw (3 x 40P)	ABA1332
	34	Screw	ABA1341
	35	• • • • •	
	36	Screw	AMZ30P060FTB
	37	Screw	AMZ30P080FTC
	38	Screw	APZ30P080FTB
	39	Screw	BPZ30P080FTB
	40	Screw	TBZ40P080FTB

(2) CONTRAST TABLE

PDP-5071PU/KUCXC and PDP-5070PU/KUCXC are constructed the same except for the following:

Mark	No.	Symbol and Description	PDP-5071PU /KUCXC	PDP-5070PU /KUCXC
NSP	17	Name Label	AAL2766	AAL2810

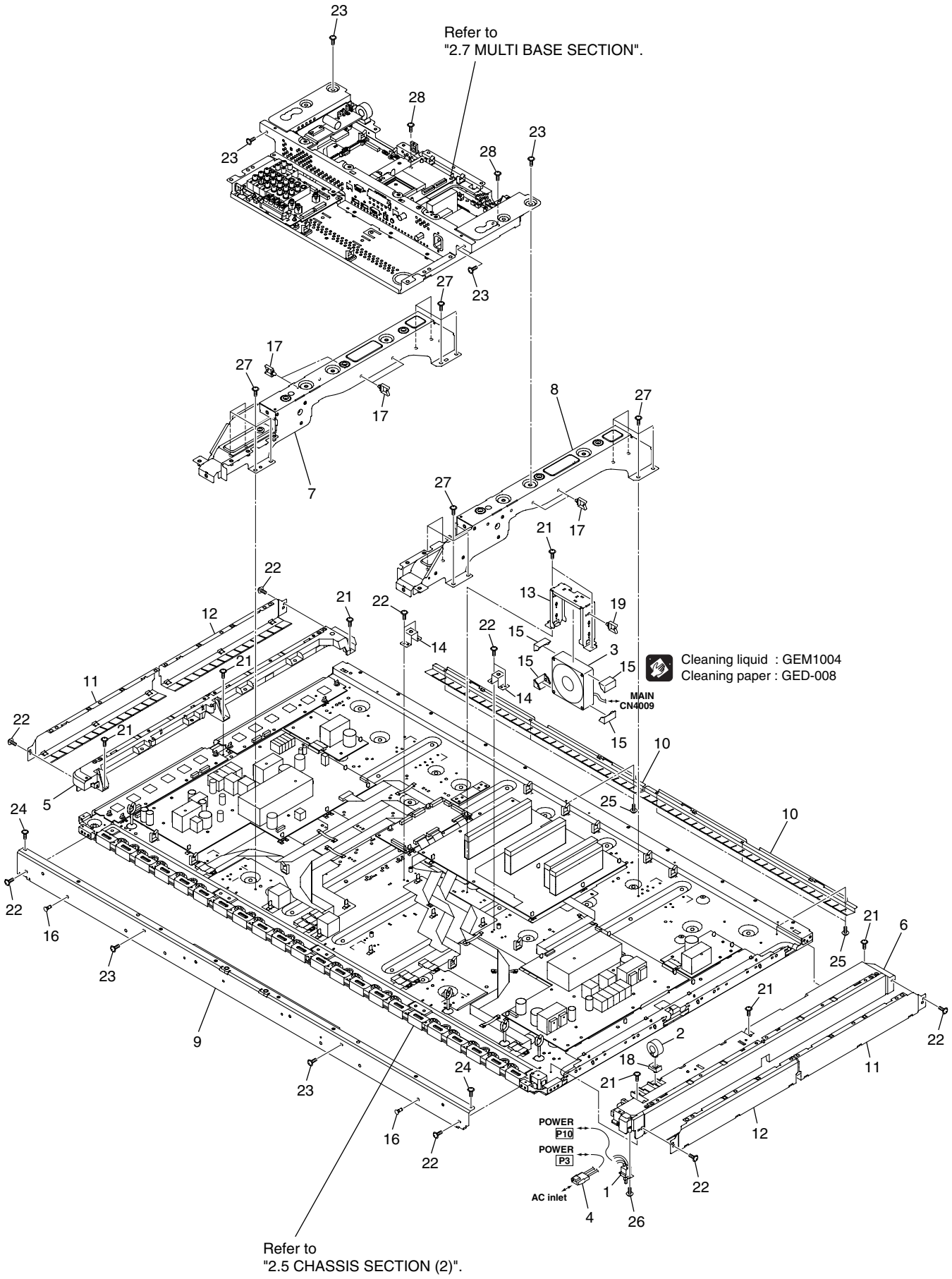
2.3 FRONT SECTION



(1) FRONT SECTION PARTS LIST

Mark	No.	Description	Part No.
	1	50 LED Assy	AWW1135
	2	LED IR Assy	AWW1136
	3	Front Case Assy (507PU)	AMB2917
	4	Corner Cushion	AEB1416
	5	Pioneer Name Plate	AAM1098
	6	Coil Spring	ABH1120
	7	Blind Cushion	AEB1415
	8	Nyron Rivet	AEC1671
	9	Screw Rivet	AEC1877
	10	Insulation Sheet A	AED1283
	11	Insulation Sheet B	AED1284
	12	Power Button	AAD4133

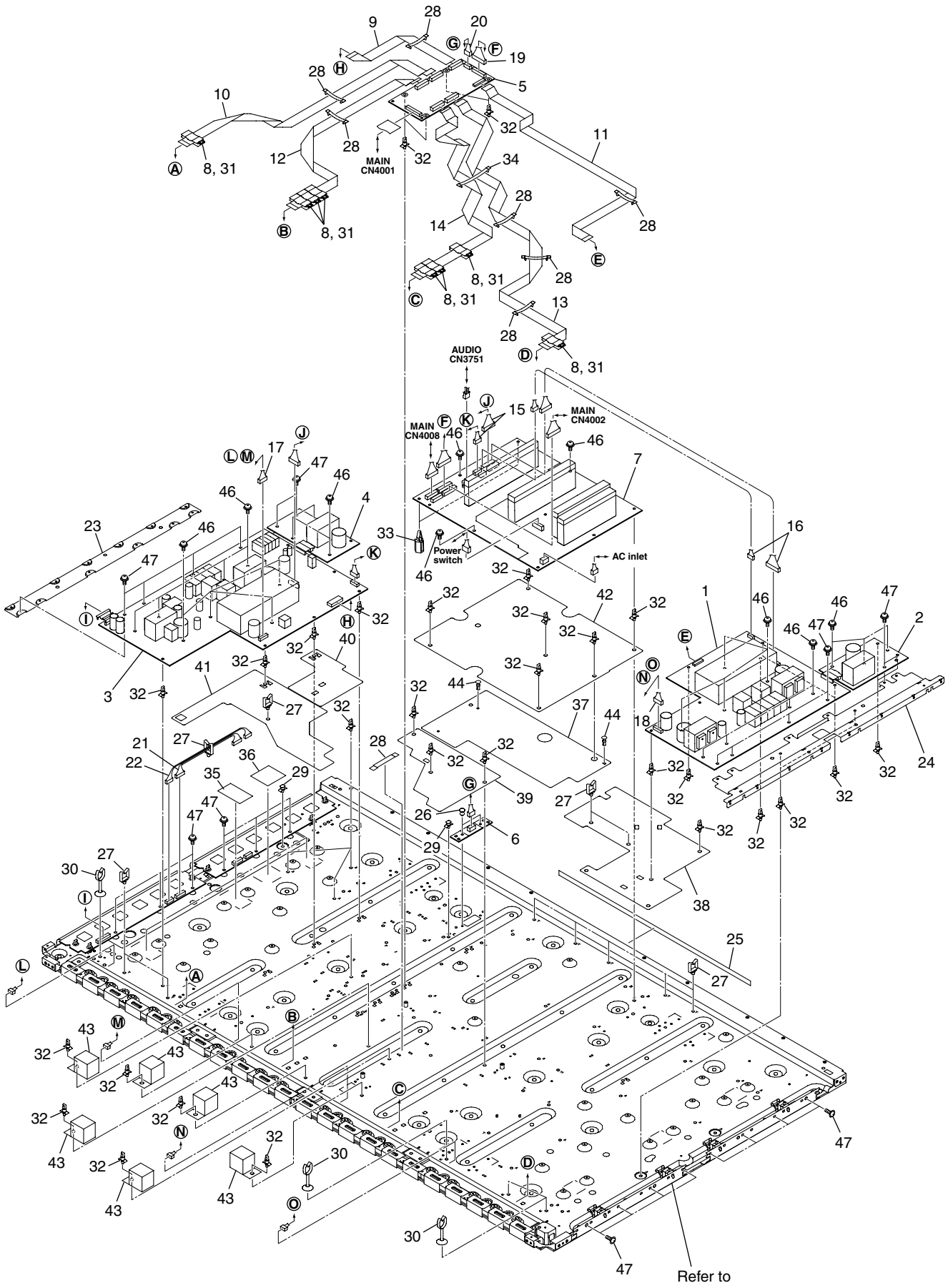
2.4 CHASSIS SECTION (1/2)



CHASSIS SECTION (1/2) PARTS LIST

Mark	No.	Description	Part No.
⚠	1	Power Switch (S1)	ASG1092
	2	Ferrite Core	ATX1044
	3	Fan Motor 80 x 25L	AXM1058
	4	Housing Wire (J103)	ADX3352
	5	Front Chassis VL (50)	AMA1014
	6	Front Chassis VR (507)	AMA1022
	7	Sub Frame L Assy 507	ANA1945
	8	Sub Frame R Assy 507	ANA1946
	9	Front Chassis H Assy (507)	ANA2031
	10	Panel Holder H (50)	ANG2769
	11	Panel Holder V1 (50)	ANG2770
	12	Panel Holder V2 (50)	ANG2771
	13	Fan Holder	ANG2833
	14	Multi Base Holder	ANG2937
	15	Floating Rubber 80	AEB1427
	16	PCB Spacer	AEC1570
	17	Wire Saddle	AEC1745
	18	Ferrite Core Holder	AEC1818
	19	Re-use Wire Saddle	AEC1945
	20	• • • • •	
	21	Screw	ABA1313
	22	Screw	ABZ30P080FTC
	23	Screw	AMZ30P060FTB
	24	Screw	APZ30P080FTB
	25	Screw	BBZ30P060FTC
	26	Screw	BPZ30P080FTB
	27	Screw	TBZ40P080FTB
	28	Screw	ABA1364

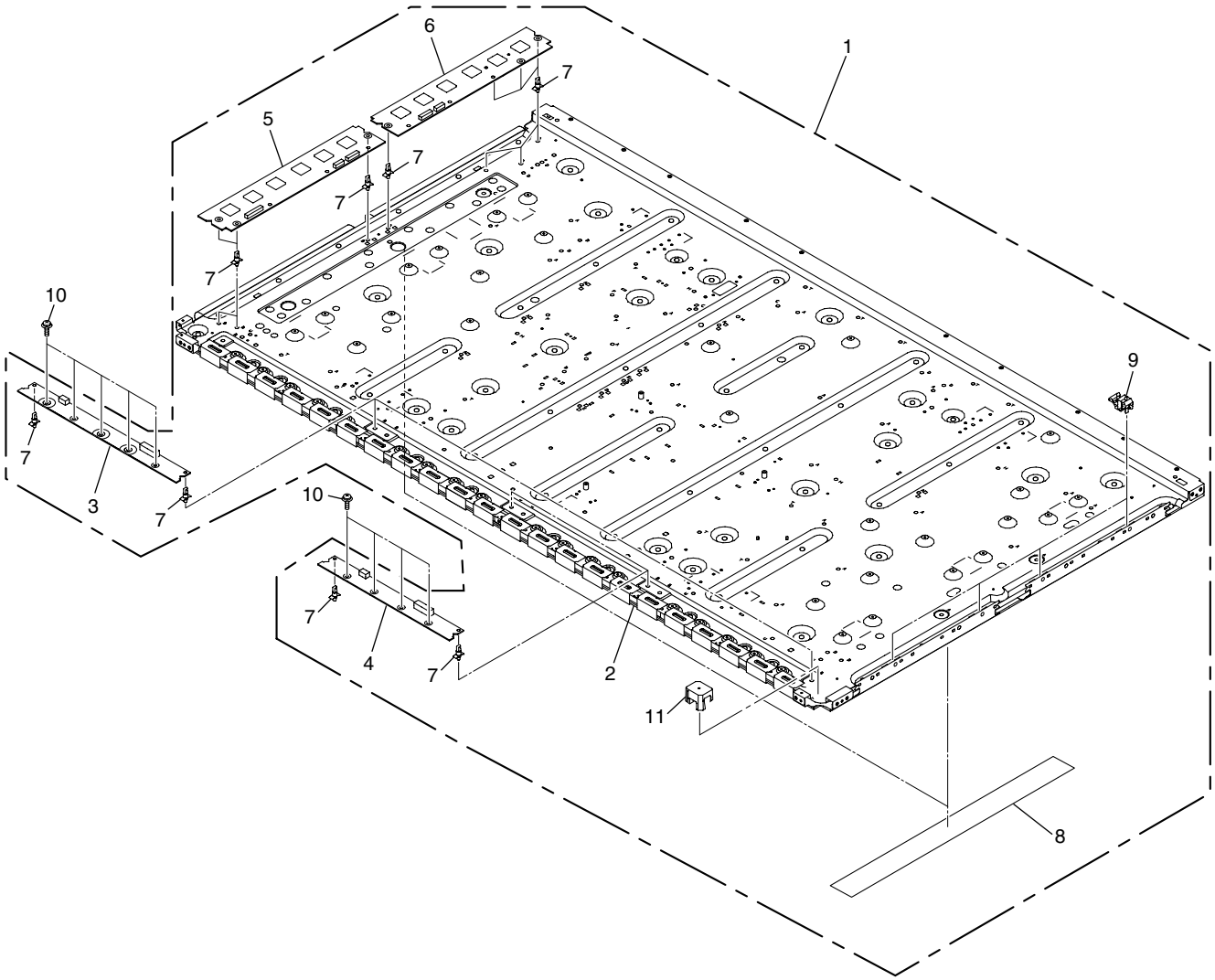
2.5 CHASSIS SECTION (2/2)



CHASSIS SECTION (2/2) PARTS LIST

Mark	No.	Description	Part No.
	1	50 X MAIN DRIVE Assy	AWW1143
	2	50 X SUB DRIVE Assy	AWW1144
	3	50 Y MAIN DRIVE Assy	AWW1145
	4	50 Y SUB DRIVE Assy	AWW1146
	5	50 DIGITAL Assy	AWW1139
	6	SENSOR Assy	AWW1140
⚠	7	POWER SUPPLY Unit	AXY1153
	8	Ferrite Core	ATX1048
	9	Flexible Cable (J201)	ADD1435
	10	Flexible Cable (J202)	ADD1436
	11	Flexible Cable (J206)	ADD1440
	12	Flexible Cable (J203)	ADD1463
	13	Flexible Cable (J205)	ADD1465
	14	Flexible Cable (J204)	ADD1466
	15	9P&6/5P Housing Wire (J101)	ADX3337
	16	8P&5P Housing Wire (J102)	ADX3338
	17	8P/4P Housing Wire (J108)	ADX3339
	18	8P/4P Housing Wire (J109)	ADX3340
	19	14P Housing Wire (J105)	ADX3354
	20	5P Housing Wire (J110)	ADX3359
	21	10P Housing Wire (J122)	ADX3300
	22	4P Housing Wire (J119)	ADX3346
	23	Conductive Plate Y	ANG2902
	24	Conductive Plate X	ANG2905
	25	Cushion	AEB1424
	26	Nyron Rivet	AEC1671
	27	Wire Saddle	AEC1745
	28	Flat Clamp	AEC1879
	29	PCB Support	AEC1938
	30	Harness Lifter 28	AEC1982
	31	Ferrite Clamp	AEC1986
	32	Re-use PCB Spacer	AEC2087
	33	Tapping Card Spacer	AEC2103
	34	Flat Clamp 60	AEC2104
	35	Drive Silicone Sheet B	AEH1109
	36	Drive Silicone Sheet C	AEH1110
	37	Power Supply Sheet B (507)	AMR3555
	38	Address Sheet A	AMR3628
	39	Address Sheet B	AMR3629
	40	Address Sheet E	AMR3645
	41	Address Sheet F	AMR3646
	42	Power Supply Sheet (507)	AMR3634
	43	Gasket AV8	ANK1881
	44	Rivet A	BEC1158
	45	• • • • •	
	46	Screw	ABA1313
	47	Screw	ABA1364

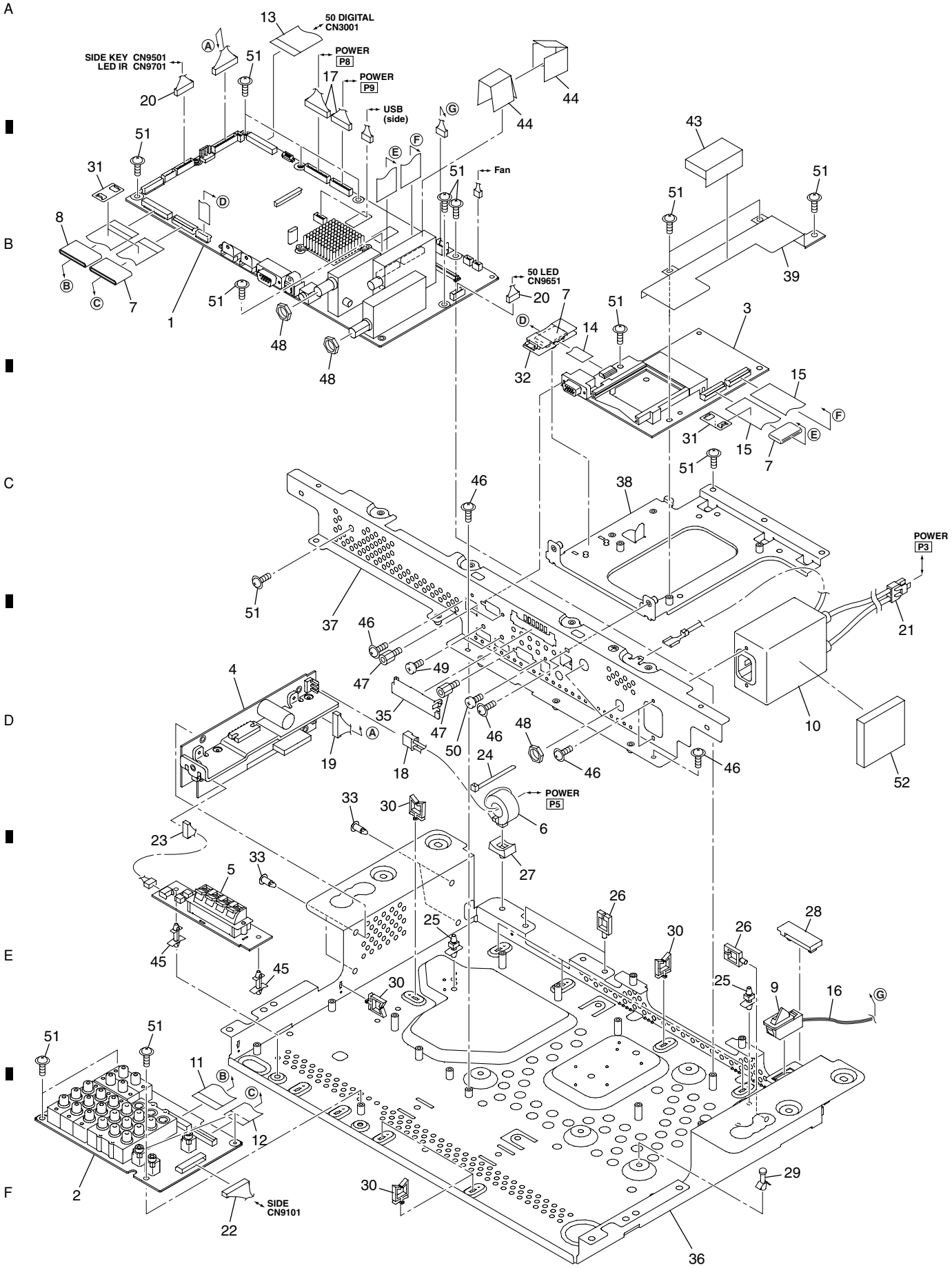
2.6 PANEL CHASSIS SECTION



PANEL CHASSIS SECTION PARTS LIST

Mark	No.	Description	Part No.
NSP	1	Panel Chassis (507) Assy	AWU1148
NSP	2	Plasma Panel (50DC) Assy	AWU1162
NSP	3	50 ADDRESS L Assy	AWW1141
NSP	4	50 ADDRESS S Assy	AWW1142
NSP	5	50 SCAN A Assy	AWW1147
NSP	6	50 SCAN B Assy	AWW1148
	7	Re-use PCB Spacer	AEC2088
NSP	8	Adhesive Tape (50)	AEH1119
	9	Conductive Plate Holder	AMR3446
	10	Screw	ABA1351
NSP	11	Tube Cover	AMR3445

2.7 MULTIBASE SECTION

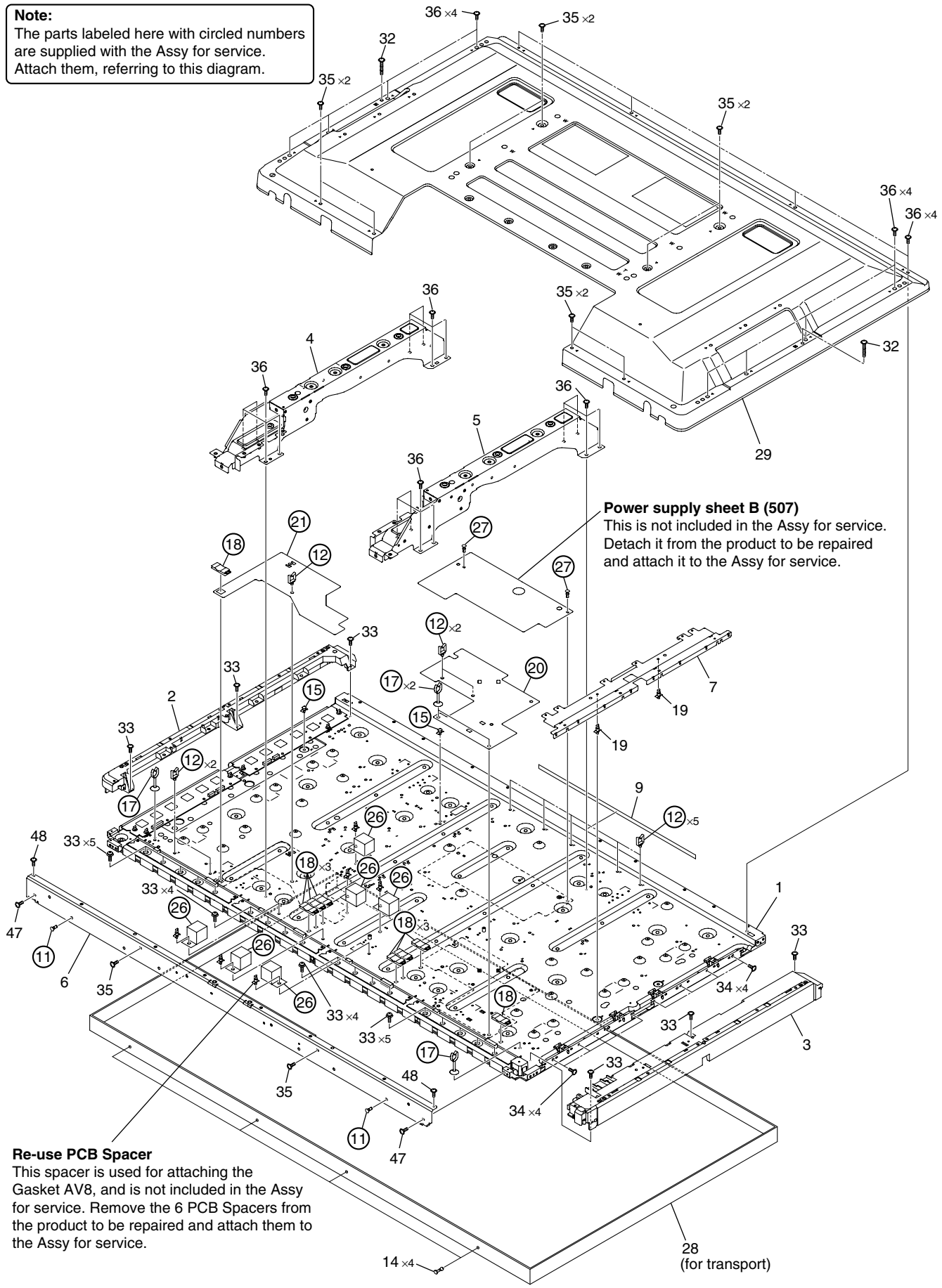


MULTIBASE SECTION PARTS LIST

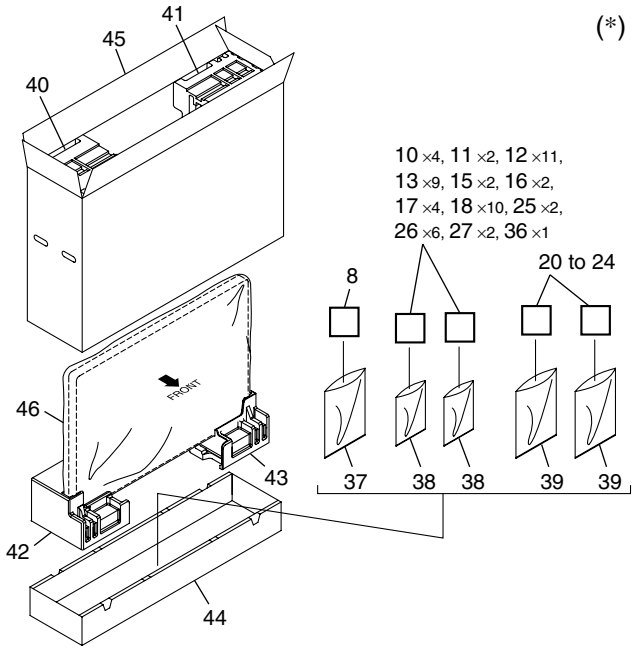
Mark	No.	Description	Part No.
	1	MAIN Assy	AWV2312
	2	TANSHI Assy	AWW1156
	3	POD Assy	AWW1154
	4	AUDIO Assy	AWW1131
	5	SP TERMINAL Assy	AWW1132
	6	Ferrite Core	ATX1044
	7	Ferrite Core	ATX1048
	8	Ferrite Core	ATX1064
⚠	9	Power Switch (S2)(TRAP)	ASG1089
⚠	10	AC Inlet (CN1)	AKP1301
	11	Flexible Cable (J210)	ADD1441
	12	Flexible Cable (J211)	ADD1442
	13	Flexible Cable (J207)	ADD1445
	14	Flexible Cable (J213)	ADD1446
	15	Flexible Cable (J214)(J215)	ADD1447
	16	3P Housing Wire (J121)	ADX3348
	17	13P&11P Housing Wire (J106)	ADX3355
	18	3P Housing Wire (J107)	ADX3356
	19	11P Housing Wire (J111)	ADX3360
	20	7/6/4/3P Housing Wire (J113)	ADX3341
	21	Housing Wire (J104)	ADX3353
	22	14P Housing Wire (J116)	ADX3344
	23	8/4P Housing Wire (J117)	ADX3345
	24	Binder	AEC-093
	25	Locking Card Spacer	AEC1429
	26	Wire Saddle	AEC1745
	27	Ferrite Core Holder	AEC1818
	28	Clamp	AEC1884
	29	Card Spacer	AEC1889
	30	Re-use Wire Saddle	AEC1945
	31	Ferrite Stopper	AEC1981
	32	Ferrite Clamp	AEC1986
	33	Locking Card Spacer	AEC2019
	34	• • • • •	
	35	POD Cover	AMR3542
	36	Multi Base (U) Assy	ANA1951
	37	Terminal Panel A (U/B)	ANC2394
	38	POD Stay A	ANG2933
	39	Tuner Stay U	ANG3028
	40	• • • • •	
	41	• • • • •	
	42	• • • • •	
⚠	43	Gasket UB	ANK1867
	44	Tuner Shield	ANK1875
	45	Locking Card Spacer	AEC2093
	46	Screw	AMZ30P060FTB
	47	Hex. Head Screw	BBA1051
	48	Nut	BBN1005
	49	Screw	BMZ30P060FTB
	50	Screw	BPZ30P080FTB
	51	Screw	PMB30P080FNI
	52	Inlet Spacer	AEC2112

2.8 PDP SERVICE ASSY 507 (AWU1212)

Note:
The parts labeled here with circled numbers are supplied with the Assy for service. Attach them, referring to this diagram.



● Packing Section



(*)

No.	Part Name	Part No.	No. of pcs	Remarks
8	Clamp base	ANG3030	×1	Not used
10	PCB spacer	AEC1126	×4	Not used
12	Wire saddle	AEC1745	×11	Ten of the 11 wire saddles are to be used with this unit. Attach them to the places where T indications are engraved.
13	Wire saddle	AEC1751	×9	Not used
15	PCB support	AEC1938	×2	Attach them to the places where C indications are engraved.
16	PCB support	AEC1958	×2	Not used
17	Harness lifter 28	AEC1982	×4	Attach them to the places where U indications are engraved.
18	Ferrite clamp	AEC1986	×10	Eight of the 10 ferrite clamps are to be used with this unit.
22	DC sheet A	AMR3612	×1	Not used
23	Address sheet E	AMR3621	×1	Not used
24	Address sheet D	AMR3631	×1	Not used
25	Gasket E	ANK1874	×2	Not used
36	Screw	TBZ40P080FTB	×13	Twelve screws have been already secured to the Assy. The remaining one screw packed in a plastic bag is not used with this unit.

PDP SERVICE ASSY 507 (AWU1212) PARTS LIST

Mark	No.	Description	Part No.
NSP	1	Panel Chassis (507) Assy	AWU1148
	2	Front Chassis VL (50)	AMA1014
	3	Front Chassis VR (507)	AMA1022
	4	Sub Frame L Assy 507	ANA1945
	5	Sub Frame R Assy 507	ANA1946
	6	Front Chassis H Assy (507)	ANA2031
	7	Conductive Plate X	ANG2905
	8	Clamp Base (*)	ANG3030
	9	Cushion	AEB1424
NSP	10	PCB Spacer (*)	AEC1126
	11	PCB Spacer	AEC1570
	12	Wire Saddle (*)	AEC1745
	13	Wire Saddle (*)	AEC1751
	14	Screw Rivet	AEC1877
	15	PCB Support (*)	AEC1938
	16	PCB Support (*)	AEC1958
	17	Harness Lifter 28 (*)	AEC1982
	18	Ferrite Clamp (*)	AEC1986
	19	Re-use PCB Spacer	AEC2087
	20	Address Sheet A	AMR3628
	21	Address Sheet F	AMR3646
	22	DC Sheet A (*)	AMR3612
	23	Address Sheet E (*)	AMR3621
	24	Address Sheet D (*)	AMR3631
	25	Gasket E (*)	ANK1874

Mark	No.	Description	Part No.
	26	Gasket AV8	ANK1881
	27	Rivet A	BEC1158
NSP	28	Front Case Assy (507SV)	AMB2977
	29	Rear Case (507)	ANE1656
	30	Caution Label	AAX3031
NSP	31	Drive Voltage Label	ARW1097
	32	Screw (3 x 40P)	ABA1332
	33	Screw	ABA1351
	34	Screw	ABA1364
	35	Screw	AMZ30P060FTB
	36	Screw (*)	TBZ40P080FTB
	37	Polyethylene Bag	AHG1337
	38	Polyethylene Bag S	AHG1338
	39	Polyethylene Bag	AHG1340
	40	Pad (507 T-L)	AHA2538
	41	Pad (507 T-R)	AHA2539
	42	Pad (507 B-L)	AHA2540
	43	Pad (507 B-R)	AHA2541
	44	Under Carton (507)	AHD3473
	45	Upper Carton (507SV)	AHD3550
	46	Protect Sheet	AHG1331
	47	Screw	ABZ30P080FTC
	48	Screw	APZ30P080FTB

2.9 TABLE TOP STAND

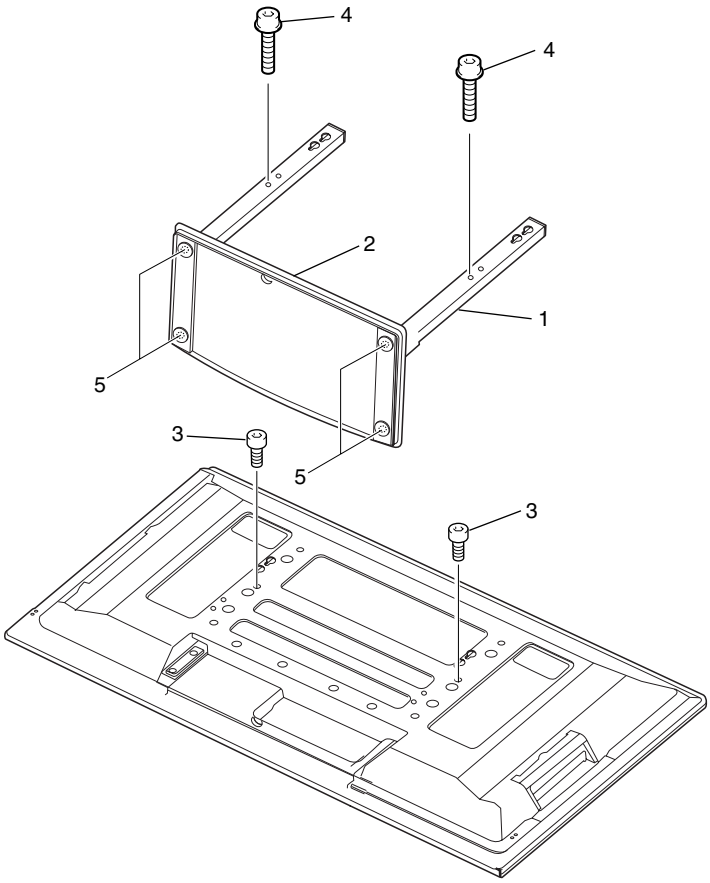


TABLE TOP STAND PARTS LIST

Mark	No.	Description	Part No.
NSP	1	Stand Pipe Assy	AXY1141
NSP	2	Base Cover Assy	AXY1142
	3	Bolt (HEX)	ABA1358
	4	Bolt (HEX)	ABA1359
	5	Screw	ABA1360

3. PCB PARTS LIST

NOTES:
- *Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	→ *56 x 10¹* →	*561*	*RD1/4PU 5 6 1 J*
47k Ω	→ *47 x 10³* →	*473*	*RD1/4PU 4 7 3 J*
0.5 Ω	→ *R50*		*RN2H R 5 0 K*
1 Ω	→ *1R0*		*RS1P 1 R 0 K*

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	→ *562 x 10¹* →	*5621*	*RN1/4PC 5 6 2 1 F*

LIST OF ASSEMBLIES

Mark	No.	Description	Part No.
NSP	1	..PANEL CHASSIS (507) ASSY	AWU1148
NSP	2	..50 ADDRESS ASSY	AWV2303
NSP	3	..50 ADDRESS L ASSY	AWW1141
NSP	3	..50 ADDRESS S ASSY	AWW1142
NSP	2	..50 SCAN ASSY	AWV2304
NSP	3	..50 SCAN A ASSY	AWW1147
NSP	3	..50 SCAN B ASSY	AWW1148
NSP	1	..50 X DRIVE ASSY	AWV2305
	2	..50 X MAIN DRIVE ASSY	AWW1143
	2	..50 X SUB DRIVE ASSY	AWW1144
NSP	1	..50 Y DRIVE ASSY	AWV2306
	2	..50 Y MAIN DRIVE ASSY	AWW1145
	2	..50 Y SUB DRIVE ASSY	AWW1146
NSP	1	..50 DIGITAL ASSY	AWV2302
	2	..50 DIGITAL ASSY	AWW1139
	2	..SENSOR ASSY	AWW1140
	1	..MAIN ASSY (US BB)	AWV2312
NSP	1	..I/O ASSY	AWV2313
	2	..POD ASSY	AWW1154
	2	..TANSHI ASSY	AWW1156
	2	..SIDE ASSY	AWW1157
NSP	1	..50 AUDIO FUKUGO ASSY	AWV2346
	2	..AUDIO ASSY	AWW1131
	2	..SP TERMINAL ASSY	AWW1132
	2	..SIDE KEY ASSY	AWW1133
	2	..50 LED ASSY	AWW1135
	2	..LED IR ASSY	AWW1136
⚠	1	..POWER SUPPLY UNIT	AXY1153

Mark	No.	Description	Part No.

50 DIGITAL ASSY

[DIGITAL IF BLOCK]

MISCELLANEOUS

F3001		CCG1162
CN3001	50P CONNECTOR	AKM1353
CN3002	20P FFC CONNECTOR	AKM1235

RESISTORS

R3007, 3010–3016	RAB4C470J
R3020–3022	RAB4C103J
Other Resistors	RS1/16SS###J

Mark	No.	Description	Part No.

[MODULE UCOM BLOCK]

SEMICONDUCTORS

IC3151	AGC1011
IC3152, 3153	SN74AHC541PW
IC3155	SN74AHC08PW
IC3156	BR24L04FJ-W
IC3157	M62334FP
IC3159	TC7W126FU
IC3160, 3161	TC74VHC123AFTS1
Q3151	2SJ461A
D3151, 3152, 3154, 3155	DAN202U
D3158, 3159, 3161–3163	1SS355

MISCELLANEOUS

X3151		CSS1616
CN3151	CONNECTOR	AKM1276
CN3152	CONNECTOR	CKS4828

RESISTORS

R3155, 3160, 3170, 3176	RAB4C101J
R3174	RAB4C103J
Other Resistors	RS1/16SS###J

CAPACITORS

C3151	CEHVKW470M6R3
C3152, 3153, 3155–3158	CKSSYB104K10
C3159, 3171, 3172, 3182	CKSRYB105K6R3
C3162, 3163, 3165, 3166	CKSSYB104K10
C3164	CCSSCH101J50
C3167	CKSSYB103K16
C3168, 3170, 3181	CKSSYB104K10

[PANEL FLASH BLOCK]

SEMICONDUCTORS

IC3301	AGC1009
IC3302, 3305	PST3628UR
IC3303	SN74AHC08PW
IC3304	PST3610UR
Q3301	RN1901
Q3302	HN1C01FU

MISCELLANEOUS

X3302		ASS1188
CN3301	CONNECTOR	CKS4835

RESISTORS

R3307, 3308	RAB4C101J

Mark No.	Description	Part No.
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C3301–3303, 3306, 3308	CKSSYB104K10
	C3304, 3307, 3309	CKSSYB472K16
	C3305, 3310	CKSSYB102K50
	C3311	CCSRCH470J50
	C3315, 3316	CKSSYB104K10
	C3317	CCSRCH471J50
	[SQ ASIC BLOCK]	
	SEMICONDUCTORS	
	IC3401	PEG239A
	MISCELLANEOUS	
	L3401–3403	QTL1013
	F3401, 3402	CCG1162
	RESISTORS	
	R3402, 3412	RAB4C101J
	R3405–3407, 3409, 3410	RAB4C220J
	R3416	RAB4C220J
	R3425	RS1/16SS5601F
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C3401, 3402, 3419, 3425	CEHVKW101M6R3
	C3403–3413, 3417, 3418	CKSSYB104K10
	C3420–3424, 3426–3432	CKSSYB104K10
	C3445–3448	CKSSYB104K10
	[ADDRESS CN BLOCK]	
	SEMICONDUCTORS	
	Q3501, 3502	RN1901
	D3501, 3502	DAN202U
	MISCELLANEOUS	
	CN3501–3504, 3506 40P CONNECTOR	AKM1348
	CN3505 18P CONNECTOR	VKN1310
	RESISTORS	
	R3519, 3520	RAB4C472J
	R3521, 3522, 3525	RAB4C101J
	R3524	RAB4C222J
	Other Resistors	RS1/16SS###J
	[DIGITAL DD CON BLOCK]	
	SEMICONDUCTORS	
	IC3601	BA80BC0WFP
	MISCELLANEOUS	
	U3601 DD CON UNIT	AXY1137
	RESISTORS	
	R3611	RAB4C101J
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C3609	CKSSYB104K10
	C3611	CKSQYB105K16
	C3612	ACH1394
	C3613	CKSSYB103K16

SENSOR ASSY

Mark No.	Description	Part No.
	SEMICONDUCTORS	
	IC3651	MM1522XU
	IC3652	BR24L02FJ-W
	Q3651	HN1B04FU
	MISCELLANEOUS	
	CN3651 CONNECTOR	AKM1276
	RESISTORS	
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C3651, 3653	CKSRYB105K6R3
	C3652, 3654	CKSSYB103K16
	C3656, 3657	CKSSYB104K10

50 X MAIN DRIVE ASSY

Mark No.	Description	Part No.
	[50X LOGIC BLOCK]	
	SEMICONDUCTORS	
	IC1001	TC74ACT541FT
	IC1002	TC74VHC00FTS1
	D1001–1004	1SS355
	MISCELLANEOUS	
	K1004, 1007 TEST PIN	AKX1061
	CN1001 18P CONNECTOR	VKN1310
	RESISTORS	
	R1001, 1006	RAB4C470J
	R1004	RAB4C472J
	VR1001	CCP1390
	Other Resistors	RS1/16S###J
	CAPACITORS	
	C1001	CEHAT470M16
	C1002, 1003	CKSRYB104K16
	C1004	CCSRCH331J50
	C1006	CCSRCH680J50
	[50X RESONANCE BLCOK]	
	SEMICONDUCTORS	
	IC1101, 1105	TND307TD
	IC1102	PS9117P
	IC1104	AXF1163
	IC1107	PS2701A-1(L)
	Q1101	2SC2412K
	Q1102, 1103	QSZ2
	Q1104, 1105	2SC4081
	D1101, 1103	UDZS5R6(B)
	D1102	CRH01
	D1104	UDZS15(B)
	MISCELLANEOUS	
	L1101	ATH1217
	L1106	ATH1216
	F1101	CTF1449
	1101	ANH1653
	1102	AEH1092
	1103	BMZ30P080FTC

Mark No.	Description	Part No.
RESISTORS		
R1107, 1108		RS3LMF100J
R1109, 1110		RS1/10S4702F
R1113		RS1/16S1002F
R1114		RS1/16S3302F
R1115		ACN1259
R1119		ACN1258
R1121		RS1/16S4701F
Other Resistors		RS1/16S###J
CAPACITORS		
C1101, 1114		CEHAT470M25
C1102, 1115		CKSRYF104Z50
C1103		CKSRYB104K16
C1104, 1117		CKSYB105K25
C1107, 1116		ACG1126
C1113		ACH1450
C1121–1124		ACE1178
[50X SUS BLOCK]		
SEMICONDUCTORS		
IC1201, 1204, 1206, 1208		TND307TD
IC1202, 1205		PS9117P
IC1209		MM1565AF
Q1201, 1208		2SC2412K
Q1202, 1204, 1205, 1207		H5N2512LS
Q1209, 1212–1214		QSZ2
Q1210, 1211		FKP280AS
Q1215, 1221		FKP300AS
Q1216		DTC143EK
Q1217		DTC123TKA
Q1220		R5009ANJ
D1201, 1205		UDZS5R6(B)
D1202, 1203, 1206, 1211		CRH01
D1204		D1FL40
D1208		1SS302
D1209		UDZS16(B)
D1210		1SS355
D1212		CRH01
D1213		UDZS8R2(B)
MISCELLANEOUS		
L1201, 1203, 1204		BTH1134
L1202		ATH1186
F1227		CTF1449
K1202	TEST PIN	AKX1061
KN1201–1204, 1210–1217		ANK1841
CN1201	14P CONNECTOR	14PL-FJ
CN1204	8P TOP POST	B8B-EH
1202	SCREW	PMB30P080FNI
RESISTORS		
R1208, 1210, 1213, 1215		RS1/10S100J
R1211		ACN1254
R1219, 1228, 1230, 1231		RS1/10S0R0J
R1220, 1224, 1233, 1256		RS1/10S2R2J
R1237		RS1/10S0R0J
R1239		ACN1258
R1245		ACN1257
R1247, 1248		RS3LMF470J
Other Resistors		RS1/16S###J

Mark No.	Description	Part No.
CAPACITORS		
C1201, 1212		ACG1126
C1202, 1209, 1232, 1236		CKSRYB104K16
C1203, 1208, 1215, 1229		CKSRYF104Z50
C1205, 1206, 1217, 1218		ACG1139
C1207, 1214, 1220, 1226		CEHAT470M25
C1210, 1211, 1216, 1241		CKSYB105K25
C1213		CCSRCH221J50
C1222, 1223		ACH1423
C1224, 1225		ACE1178
C1228		CEHAT2R2M2E
C1230		ACH1449
C1231, 1237		CEHAT101M10
C1233		CKSRYB473K16
C1234		CEHAT470M16
C1235		CKSRYB105K6R3
C1244		CKSRYB104K25
[DRIVE HEAT SINK M]		
MISCELLANEOUS		
3001, 3001		ANH1656
3001		ANH1656
3101, 3101		ANG2679
3101		ANG2679
[50X D-D CON BLOCK]		
SEMICONDUCTORS		
IC1301		PS2701A-1(L)
IC1302		TA76431FR
Q1301		2SC2412K
Q1303, 1306, 1307		HN1C01FU
Q1304, 1401		2SD1898
Q1305		2SA1037K
Q1402		2SC4081
D1307		CRF03
D1308, 1403		UDZS5R1(B)
D1309, 1311, 1401, 1405		CRH01
D1312, 1402		1SS301
D1313, 1318, 1404, 1406		1SS355
D1315, 1316		UDZS4R7(B)
MISCELLANEOUS		
T1302		ATK1160
T1401		ATK1159
RESISTORS		
R1312–1314, 1317		RS1/10S224J
R1328		RAB4C472J
VR1301		CCP1392
Other Resistors		RS1/16S###J
CAPACITORS		
C1301, 1302, 1405, 1406		CKSRYB104K16
C1308, 1401, 1407		CEHAT101M25
C1310, 1313, 1402		CKSYB105K25
C1311		ACH1451
C1312, 1403		CKSRYB103K50
C1314		CEHAT100M50
C1404		ACG1105

Mark No.	Description	Part No.

50 X SUB DRIVE ASSY

SEMICONDUCTORS

	Q1501	FKP280AS
	Q1502	FKP300AS
	Q1504, 1505	H5N2512LS
	Q1507	QSZ2
	D1501	CRH01

MISCELLANEOUS

	K1501 TEST PIN	AKX1061
	KN1501–1505 GROUND PLATE	ANK1841
	CN1501 14P CONNECTOR	14R-FJ
	1502 SCREW	PMB30P080FNI

RESISTORS

	R1502, 1503	RS1/10S2R2J
	R1507, 1508	RS1/10S100J
	Other Resistors	RS1/16S###J

CAPACITORS

	C1501	ACE1178
	C1503, 1504	ACG1139
	C1505	ACH1423
	C1506	CKSYB105K25

[DRIVE HEAT SINK M]

MISCELLANEOUS

	3001, 3001	ANH1656
	3101, 3101	ANG2679

RESISTORS

	Other Resistors	RS1/16S###J

50 Y MAIN DRIVE ASSY

[50Y LOGIC BLOCK]

SEMICONDUCTORS

	IC2001, 2003	TC74ACT541FT
	IC2002	TC74ACT540FT
	D2001, 2006, 2007, 2011	1SS355
	D2003–2005	1SS301
	D2012	1SS355

MISCELLANEOUS

	K2011, 2014 TEST PIN	AKX1061
	CN2001 40P CONNECTOR	AKM1348

RESISTORS

	R2001, 2003, 2008, 2020	RAB4C470J
	R2002, 2006	RAB4C101J
	R2004, 2005, 2013, 2025	RAB4C472J
	VR2001, 2002	CCP1390
	Other Resistors	RS1/16S###J

CAPACITORS

	C2001	CEHAT470M16
	C2002–2004	CKSRYB104K16
	C2005, 2006	CCSRCH331J50
	C2007	CCSRCH680J50

[50Y RESONANCE BLCOK]

SEMICONDUCTORS

	IC2101, 2104	TND307TD
	IC2102	PS9117P
	IC2106	PS2701A-1(L)
	IC2107	AXF1163
	Q2101	2SC2412K
	Q2103, 2106	QSZ2
	Q2110, 2111	2SC4081
	D2101, 2112	UDZS5R6(B)
	D2107	CRH01
	D2113	UDZS15(B)

MISCELLANEOUS

	L2101	ATH1217
	L2103	ATH1216
	F2101	CTF1449
	2101	ANH1653
	2102	AEH1092
	2103 SCREW	BMZ30P080FTC

RESISTORS

	R2109	ACN1259
	R2112, 2133	ACN1255
	R2113, 2114	RS1/10S4702F
	R2118	ACN1241
	R2120	RS1/16S1002F
	R2121	RS1/16S3302F
	R2126	RS1/16S4701F
	R2129	ACN1258
	Other Resistors	RS1/16S###J

CAPACITORS

	C2101, 2114	CEHAT470M25
	C2102, 2115	CKSRYF104Z50
	C2103	CKSRYB104K16
	C2104, 2116	CKSYB105K25
	C2107	ACG1139
	C2108–2111	ACE1178
	C2113	ACH1450
	C2117	ACG1138

[50Y SUS BLOCK]

SEMICONDUCTORS

	IC2201, 2203, 2205, 2208	TND307TD
	IC2204, 2209	PS9117P
	IC2210	TND307TD
	IC2212	TND301S
	IC2213	MM1565AF
	Q2201	2SA2142
	Q2202, 2214	2SC4081
	Q2203	R5009ANJ
	Q2204, 2206, 2207, 2209	H5N2512LS
	Q2210, 2216	FKP280AS
	Q2211, 2213, 2217, 2219	H5N2512LS
	Q2215, 2221, 2222, 2241	QSZ2
	Q2220, 2223	FKP300AS
	Q2236	2SK3050
	Q2238	R6008ANJ
	Q2261	DTC143EK
	Q2262	DTC123TKA
	D2201, 2202, 2204, 2209	CRH01
	D2203, 2225	1SS355
	D2205, 2206	1SS302
	D2207	CRF03
	D2208, 2212	UDZS5R6(B)
	D2210, 2213, 2216	CRH01

Mark No.	Description	Part No.
D2211		D1FL40
D2219		1SS301
D2220–2222, 2231, 2301		CRH01
D2223, 2224		UDZS16(B)
D2241		UDZS8R2(B)
MISCELLANEOUS		
L2201, 2203, 2204		BTH1134
L2202		ATH1186
F2201–2214		ATX1062
F2221		CTF1449
K2202–2204	TEST PIN	AKX1061
KN2201–2204, 2210–2217		ANK1841
CN2202	14P CONNECTOR	14PL-FJ
CN2204	CONNECTOR	B9B-EH
2202	SCREW	PMB30P080FNI
RESISTORS		
R2201		RS3LMF821J
R2202, 2204		RS1/10S151J
R2217, 2219, 2222, 2224		RS1/10S100J
R2225		ACN1254
R2226, 2235, 2243, 2246		RS1/10S2R2J
R2228, 2230, 2236, 2238		RS1/10S100J
R2234, 2255, 2372		RS1/10S0R0J
R2260		ACN1257
R2264		ACN1258
R2280		RS3LMF471J
R2281–2284		ACN1241
R2341, 2343		RS2LMF5R6J
Other Resistors		RS1/16S###J
CAPACITORS		
C2201, 2209, 2215, 2222		CEHAT470M25
C2202, 2208, 2210, 2216		CKSRYF104Z50
C2203		ACH1427
C2204		CCSRCH102J50
C2205, 2256		ACG1126
C2207, 2217, 2248, 2253		CKSRYB104K16
C2211, 2212, 2225, 2226		ACG1139
C2218, 2219, 2224, 2261		CKSYB105K25
C2221		CCSRCH221J50
C2223, 2232		CKSRYF104Z50
C2227, 2231		CEHAT470M25
C2234, 2240		CEHAT2R2M2E
C2237, 2241		ACH1423
C2238, 2239		ACE1178
C2244		ACH1449
C2246		ACH1426
C2247, 2252		CEHAT101M10
C2249		CKSRYB473K16
C2250		CEHAT470M16
C2251		CKSRYB105K6R3
C2271, 2276		CKSRYB104K25
[DRIVE HEAT SINK M]		
MISCELLANEOUS		
3001, 3001		ANH1656
3001		ANH1656
3101, 3101		ANG2679
3101		ANG2679

Mark No.	Description	Part No.
[50Y VH D-D CON BLOCK]		
SEMICONDUCTORS		
IC2401		BA10358F
IC2402		MIP2E3DMU
IC2403		PS2701A-1(L)
IC2405, 2412		TA76431FR
Q2401		2SC3425
Q2402		2SD2568
Q2403		2SC4081
Q2404		HN1C01FU
D2402, 2407		CRF03
D2403		UDZS33(B)
D2404		1SS355
D2406, 2410		UDZS4R7(B)
D2408, 2409		CRH01
D2411		UDZS12(B)
MISCELLANEOUS		
L2401		BTH1136
T2401		ATK1158
RESISTORS		
R2401, 2402		RS1/10S104J
R2403, 2404, 2406		RS1/10S2203F
R2407, 2410		RS1/16S5601F
R2412		RS1/16S1003F
R2413		RS1/16S1802F
R2414, 2415		RS1/16S4702F
R2416		RS1/10S0R0J
R2420, 2421, 2424		RS1/10S473J
R2426		RAB4C472J
VR2401		CCP1392
VR2402		CCP1390
Other Resistors		RS1/16S###J
CAPACITORS		
C2401		ACE1177
C2402		ACH1425
C2403, 2404		CKSRYB104K25
C2405, 2407, 2412		CKSRYB104K16
C2408		CEHAT101M16
C2409		CEHAT470M25
C2410		CEHAT101M25
C2411		ACH1450
C2413		CEHAT221M16
C2421		ACH1451
[50Y D-D CON BLOCK]		
SEMICONDUCTORS		
IC2501, 2502, 2504		PS2701A-1(L)
IC2503		BA10358F
IC2506, 2514		TA76431FR
Q2501, 2506, 2511		2SD1898
Q2502, 2507		2SA1576A
Q2503, 2515		DTC143EUA
Q2504, 2509, 2513		HN1C01FU
Q2505		2SC2713
Q2508		2SA2005
Q2510		2SA1163
Q2512, 2514		2SC4081

Mark No.	Description	Part No.
	Q2520	2SC2412K
	D2501, 2503, 2510, 2516	CRH01
	D2502, 2512, 2518	1SS301
A	D2504, 2508	UDZS4R7(B)
	D2505, 2507, 2513, 2517	1SS355
	D2509	D1FL40
	D2511	1SS302
	D2515, 2521	UDZS5R1(B)
	D2519, 2520, 2523	1SS355
	D2522	UDZS5R6(B)
	D2524	UDZS15(B)
	MISCELLANEOUS	
	T2501	ATK1156
B	T2502	ATK1161
	T2503	ATK1159
	RESISTORS	
	R2510, 2514, 2539, 2543	RS1/16S4701F
	R2513	RAB4C472J
	R2523	RS1/16S4702F
	R2524, 2531	RS1/10S224J
	R2530, 2532	RS1/16S1501F
	R2533	RS3LMF151J
	R2536	RS1/16S1002F
	R2544	RS1/16S4701F
C	R2550	RS1/16S5601F
	R2554	RS1/16S6801F
	VR2501	CCP1390
	Other Resistors	RS1/16S###J
	CAPACITORS	
	C2501, 2502, 2514	CEHAT101M25
	C2503, 2515	ACG1105
	C2504	CKSRYB102K50
	C2505, 2506, 2512	CKSRYB104K16
	C2507	CEHAT221M6R3
D		
	C2508	CEHAT221M25
	C2509, 2510, 2518	CKSRYB103K50
	C2511, 2516	CKSRYB105K6R3
	C2513	CKSYB105K25
	C2517	CKSRYF104Z50
	C2519–2521, 2525	CKSRYB104K16
	[50Y SCAN BLOCK]	
	SEMICONDUCTORS	
	IC2601–2603, 2607	TLP116
E	IC2604–2606	PS9117P
	IC2610, 2611	TC74AC540FT
	MISCELLANEOUS	
	L2601, 2611	BTH1134
	CN2601 15P CONNECTOR	AKM1200
	RESISTORS	
	R2624	RAB4C220J
	R2631	RS1/10S0R0J
	Other Resistors	RS1/16S###J
F	**CAPACITORS**	
	C2601, 2623	CEHAT101M10
	C2602, 2603, 2611–2617	CKSRYB104K16
	C2621, 2622	ACH1450

Mark No.	Description	Part No.
	C2631	CKSRYB104K16

50Y SUB DRIVE ASSY

	SEMICONDUCTORS	
	Q2701	FKP280AS
	Q2711	FKP300AS
	Q2721, 2723, 2725, 2726	H5N2512LS
	Q2731	QSZ2
	D2701	CRH01
	MISCELLANEOUS	
	F2701–2706	ATX1062
	K2701 TEST PIN	AKX1061
	KN2701, 2702, 2711–2713	ANK1841
	CN2701 14P CONNECTOR	14R-FJ
	2702 SCREW	PMB30P080FNI
	RESISTORS	
	R2702, 2712	RS1/10S2R2J
	R2722, 2724, 2726, 2727	RS1/10S100J
	R2732	RS1/10S0R0J
	Other Resistors	RS1/16S###J
	CAPACITORS	
	C2701	ACE1178
	C2702	ACH1423
	C2703	ACG1088
	C2711, 2721	ACG1139
	C2731	CKSYB105K25
	[DRIVE HEAT SINK M]	
	MISCELLANEOUS	
	3001, 3001	ANH1656
	3101, 3101	ANG2679
	RESISTORS	
	All Resistors	RS1/16S###J

MAIN ASSY

	[BOARD IF BLOCK(U)]	
	SEMICONDUCTORS	
	IC4001–4005	TC74VCX541FT
	Q4001, 4002	DTC124EUA
	Q4003	RN2902
	Q4004	DTA124EUA
	MISCELLANEOUS	
	L4001–4005	BTX1042
	F4001–4003, 4011–4016	CTF1557
	F4005, 4006	VTF1084
	CN4001, 4004 50P CONNECTOR	AKM1349
	CN4005 40P CONNECTOR	AKM1348
	CN4006 6P PLUG	KM200NA6
	CN4009 CONNECTOR	AKM1274
	CN4013 12P FFC CONNECTOR	AKM1233
	CN4018 3P CONNECTOR	AKM1213
	RESISTORS	
	R4001	RAB4CQ470J
	R4002, 4018	RS1/16S102J
	R4012, 4017, 4048	RS1/16S75R0F
	R4016	RS1/16S0R0J
	R4021–4024	BCN1067

Mark No.	Description	Part No.
R4073, 4074		RS1/10S0R0J
Other Resistors		RS1/16SS###J
CAPACITORS		
C4001–4003, 4007, 4027		CKSSYB104K10
C4004		CCSSCH101J50
C4006, 4009, 4010, 4026		CCSSCH221J50
C4011, 4012, 4017, 4018		DCH1201
C4013, 4020, 4021, 4023		CKSSYB102K50
C4014		CKSSYF104Z16
C4016		ACG1128
C4019, 4022, 4025, 4030		CKSRYB102K50
C4024		CKSSYB102K50
C4033, 4036, 4039		CKSRYB102K50
C4043		CKSSYB104K10
C4051–4053		CCSSCH470J50
[POWER 0 BLOCK(U)]		
SEMICONDUCTORS		
IC4101, 4105		S-1132B18-U5
IC4102, 4103		LTC3412EFE
IC4104, 4111		NJM2846DL3-05
IC4106		NJM2886DL3-15
IC4107		NJM2846DL3-33
IC4108		NJM2846DL3-18
IC4110		PQ090DNA1ZPH
Q4101, 4110		RN1902
Q4104		DTC124EUA
Q4105, 4106		UPA1917TE
Q4107, 4108, 4112, 4113		2SC4116
Q4109		2SD2114K
D4101–4110		1SS355
D4111, 4114, 4115		1SS357
MISCELLANEOUS		
L4101		BTX1042
L4102, 4106		BTX1039
L4108, 4109		ATH1194
RESISTORS		
R4107, 4110, 4134–4136		RS1/10S0R0J
R4119, 4131, 4146		RS1/16SS3003D
R4120		RS1/16SS2003D
R4123, 4145		RS1/16SS1502F
R4124		RS1/16SS6202D
R4129		RS1/16SS3903D
R4133		RS1/16SS1503D
R4139		RS1/10S0R0J
R4148		RS1/16S102J
Other Resistors		RS1/16SS###J
CAPACITORS		
C4101, 4103, 4106, 4108		CKSRYB105K10
C4102, 4104, 4105, 4107		DCH1201
C4109, 4111, 4116, 4119		DCH1201
C4110, 4117		CCSSCH101J50
C4112		CCG1232
C4113, 4128		CKSSYB103K16
C4114		BCG1050
C4120, 4121, 4135, 4156		CKSSYB104K10
C4122		CCSSCH220J50
C4124, 4126		DCH1165

Mark No.	Description	Part No.
C4125		CKSRYB104K16
C4127		CKSRYB105K10
C4129		CCSSCH390J50
C4132, 4133, 4136, 4137		BCG1059
C4138, 4140		CCSSCH221J50
C4139		CCSRCH101J50
C4142		BCG1059
C4147		CCSRCH102J50
C4165		DCH1201
C4172		CKSSYB104K10
[ATUNER BLOCK(U)]		
SEMICONDUCTORS		
IC4401		TC74HC4066AFT
IC4402		AN5832SA
Q4401, 4416		DTC124EUA
Q4402, 4405, 4409, 4417		2SA1586
Q4403		DTA124EUA
Q4404, 4406–4408, 4410		2SC4116
Q4411		2SC4116
Q4413–4415		HN1B04FU
Q4418		2SA1586
D4401		1SS355
D4402		UDZS30(B)
MISCELLANEOUS		
L4401–4405		BTH1121
F4401–4404		VTF1080
K4401, 4402	TEST PIN	AKX1061
⚠U4401	TV TUNER UNIT	AXF1169
⚠U4402	TV TUNER PACK	AXF1171
RESISTORS		
R4407, 4429		RS1/16SS1002F
Other Resistors		RS1/16SS###J
CAPACITORS		
C4401, 4406		CKSRYF104Z50
C4403, 4410		CCSRCH821J50
C4404, 4409		CKSQYB105K16
C4405		CKSRYB224K16
C4408		CCSRCH331J50
C4411, 4412		CKSRYB334K10
C4413		CKSSYB102K50
C4414, 4415		CCSSCH270J50
C4416, 4417		CCSSCH221J50
C4421		CKSSYB223K16
C4422, 4423, 4425, 4426		CEHVKW101M6R3
C4427		CEHVKW220M16
C4428		CKSSYB333K16
C4429–4431, 4448–4450		CKSSYB104K10
C4432, 4443		DCH1201
C4433, 4454		CEHVKW101M6R3
C4435, 4437, 4439		CKSSYF104Z16
C4438, 4444, 4446, 4451		CCG1205
C4447		ACG1122
C4452		ACH1417
C4453		ACH1418
C4455		CKSSYB104K10
C4456		CKSRYB102K50
C4457		CCSSCH120J50
C4458		CCSSCH101J50

Mark No.	Description	Part No.
C4459		CEHVKW221M10
	[AV SW BLOCK(U)]	
	SEMICONDUCTORS	
IC4701		R2S11002AFT
IC4702, 4704		NJM12904V
IC4703		TC4052BFT
Q4701–4703, 4706, 4707		2SA1586
Q4708		HN1A01FU
Q4709, 4711, 4714		UMD2N
Q4712, 4713, 4722		2SC4116
Q4716		HN1C01FU
Q4719–4721		2SA1586
Q4723–4725		2SC5233
D4701–4703, 4706		1SS301
D4705		1SS355
	RESISTORS	
R4704		RS1/16S1001F
R4705		RS1/16S2700F
R4724, 4725		RS1/16S5600F
R4728, 4731		RS1/16S1800F
R4770, 4771		RS1/16S681J
R4772, 4774, 4778, 4779		RS1/16S102J
R4783, 4787, 4795, 4796		RS1/16S182J
R4793, 4814, 4815		RS1/16S821J
R4794, 4811, 4813		RS1/16S221J
R4804, 4806, 4807, 4817		RS1/16S182J
R4818		RS1/16S182J
Other Resistors		RS1/16SS###J
	CAPACITORS	
C4701, 4702, 4704–4716		CKSRYB105K10
C4717, 4720		CCSRCH181J50
C4718, 4721		CCSRCH681J50
C4719, 4724, 4725, 4728		CKSRYB105K10
C4723, 4726, 4729–4731		CKSSYB104K10
C4727, 4732, 4734		DCH1201
C4735		ACG1122
C4736, 4740–4742, 4746		CKSRYB104K16
C4738, 4739, 4743, 4744		CCG1205
C4745		DCH1165
C4747–4749, 4751, 4752		DCH1201
C4750		CCSRCH331J50
C4753		CKSSYB473K16
C4754		CKSRYB224K10
C4757, 4760, 4761		DCH1201
C4758, 4759		CKSSYF104Z16
C4762, 4763		CCG1205
C4768		ACH1454
C4770		CKSRYB105K10
	[RGB SW BLOCK(U)]	
	SEMICONDUCTORS	
IC4901		R2S11001FT
Q4901–4904		2SA1586
	RESISTORS	
R4914		RAB4CQ102J
R4932		RS1/16S5600F
R4934		RS1/16S1800F
R4935, 4938		RS1/16S821J
R4942		RS1/16S102J
Other Resistors		RS1/16SS###J
	CAPACITORS	
C4901–4903, 4911, 4916		CKSRYB105K10
C4904–4906, 4909, 4910		CKSSYB104K10
C4907, 4908		CCSSCH680J50
C4912–4915, 4917–4919		CKSSYB103K16
C4920		CKSRYB105K10
C4921–4927		CKSSYB103K16
C4932, 4933		DCH1201
	[VDEC BLOCK(U)]	
	SEMICONDUCTORS	
IC5101		UPD64015AGM-UEU
IC5102		EDS1616AGTA-75-E
	MISCELLANEOUS	
L5101–5103		BTX1042
X5102		ASS1191
	RESISTORS	
R5101–5103, 5138		ACN1246
R5104, 5105		BCN1067
R5106–5108		RS1/16S0R0J
R5114		RS1/16SS6200D
R5120, 5123, 5124		RS1/16SS2000F
R5127		RS1/16S334J
R5133		RAB4CQ220J
R5137		RS1/10S0R0J
Other Resistors		RS1/16SS###J
	CAPACITORS	
C5101–5105		CKSSYB103K16
C5106, 5107		CCSSCH8R0D50
C5108		CKSSYB102K50
C5109, 5110, 5154, 5155		DCH1201
C5114–5124, 5127–5129		CKSSYB104K10
C5134, 5135, 5156–5165		CKSSYB104K10
C5167–5170, 5172–5174		CKSSYB104K10
C5177–5180		CKSSYB104K10
	[ADC BLOCK(U)]	
	SEMICONDUCTORS	
IC5301		AD9985KSTZ-110
	RESISTORS	
R5301–5303		BCN1067
R5304, 5306–5308		RS1/16SS470J
R5305		RS1/16SS2701F
R5310, 5311		RS1/10S0R0J
Other Resistors		RS1/16S###J
	CAPACITORS	
C5301		CKSSYB823K10
C5302		CKSSYB822K16
C5303–5305		CKSSYB473K16
C5307–5316, 5318, 5319		CKSSYB104K10
	[HDMI BLOCK(U)]	
	SEMICONDUCTORS	
IC5401		SII9023CTU

Mark No.	Description	Part No.
IC5402		PCM1754DBQ
IC5403, 5404		BR24L02FJ-W
Q5401, 5402		HN1K02FU
Q5407, 5408		UMD2N
Q5413, 5414		RN1902
D5401, 5402		1SS301
D5407, 5408		UDZS6R8(B)
MISCELLANEOUS		
JA5401, 5402	HDMI CONNECTOR	AKP1278
X5401		ASS1192
RESISTORS		
R5401–5403		BCN1071
R5415		RS1/10S0R0J
R5450		RAB4CQ473J
R5451		RAB4CQ100J
R5452, 5455		RAB4CQ103J
R5454		RAB4CQ470J
Other Resistors		RS1/16SS###J
CAPACITORS		
C5401, 5402		CCSSCH120J50
C5403, 5404, 5407–5412		CKSSYB104K10
C5405, 5452, 5473		DCH1201
C5406, 5453		CCSSCH101J50
C5416, 5419–5446		CKSSYB104K10
[CCD BLOCK(U)]		
SEMICONDUCTORS		
IC4601		PEG150A
IC4602, 4603		NJM2561F1
Q4601, 4602		2SA1586
MISCELLANEOUS		
X4601		ASS1159
RESISTORS		
R4603, 4648–4661, 4666		RAB4CQ473J
R4664		RAB4CQ102J
R4667		RAB4CQ473J
Other Resistors		RS1/16SS###J
CAPACITORS		
C4601–4605, 4608, 4609		CKSSYB104K10
C4606, 4607		CCG1205
C4612, 4613		CKSSYB102K50
C4614, 4615		CCSSCH221J50
C4616		CCSSCK2R0C50
C4617		CKSSYB153K16
C4618, 4619		DCH1201
C4620, 4621		CCSRCH331J50
C4622, 4623		CCSRCH5R0C50
C4627, 4630, 4631		CKSSYB104K10
[DTUNER BLOCK(U)]		
SEMICONDUCTORS		
IC6001		MCP3021A5-I/OTG
IC6002, 6003		UPC3219GV
IC6004, 6005		MM1565AF
Q6001		DTC124EUA
Q6002		2SC4116
Q6003–6005		2SC5084
Q6006		BB504CDS

Mark No.	Description	Part No.
D6001–6003		1SS355
D6004		UDZS30(B)
MISCELLANEOUS		
L6001, 6002		BTH1121
L6003		LCTAW1R5J2520
L6004		LCYA10NJ2520
L6006		LCYAR82J2520
F6001		BTF1130
F6002–6006		VTF1084
F6007		ATF1219
F6008, 6009		VTF1080
⚠U6001	DIGITAL FRONTEND	AXF1167
RESISTORS		
R6011		RS1/16SS6801F
R6023		RS1/16SS2201F
R6024		RS1/16SS4703F
R6025		RS1/16SS1502F
R6026		RS1/16SS6802F
R6027		RS1/16SS5602F
R6028		RS1/16SS4701F
R6041		RS1/16SS1001F
Other Resistors		RS1/16SS###J
CAPACITORS		
C6001		ACH1442
C6004, 6005, 6008		CKSSYB104K10
C6006		CKSQYB225K10
C6007, 6043		BCG1064
C6009, 6010		CKSSYB471K50
C6011, 6012, 6014–6017		CKSSYB103K16
C6013		CCSSCK2R0C50
C6019, 6022–6031, 6034		CKSSYB103K16
C6032, 6033		CKSSYB102K50
C6035		CKSSYB103K16
C6036		CEHVKW101M6R3
C6038, 6040		CKSQYB105K16
C6039, 6041, 6042		DCH1201
[QPSK BLOCK(U)]		
SEMICONDUCTORS		
IC6101		UPC3220GR
MISCELLANEOUS		
L6101		LCTAW1R5J2520
L6102		LCYA56NJ2520
L6103, 6104		LCYA68NJ2520
L6105, 6106		LCYA82NJ2520
L6107		LCYAR10J2520
F6101		ATF1215
F6102		VTF1084
RESISTORS		
Other Resistors		RS1/16SS###J
CAPACITORS		
C6101, 6103, 6105		CCSSCH270J50
C6102		CCSSCH100D50
C6104		CCSSCH120J50
C6106		CCSSCH560J50
C6107		CKSSYB271K50
C6108, 6109, 6115–6120		CKSSYB103K16

Mark No.	Description	Part No.
	C6110, 6112, 6114, 6121	CKSSYB102K50
	C6111, 6113	CCSSCH390J50
	C6123	CKSSYB102K50
A	C6124–6126	CCSSCH101J50
	[F/E IC BLOCK(U)]	
	SEMICONDUCTORS	
	IC6201	BCM3517KQLGB0
	MISCELLANEOUS	
	L6201	BTX1042
	L6202	LCTAW1R8J2520
	F6201–6205	VTF1084
	X6201	BSS1134
B		
	RESISTORS	
	R6211, 6213	RS1/16S3010F
	R6237	RAB4CQ101J
	R6238, 6240	RAB4CQ330J
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C6201, 6203, 6206, 6208	DCH1201
	C6202, 6204, 6205	BCG1059
	C6209–6219, 6222–6232	CKSSYB103K16
	C6220, 6221, 6233	CCSSCH120J50
C	C6234	CCSSCH150J50
	C6235–6237, 6240–6252	CKSSYB103K16
	C6239	CKSSYB102K50
	C6253, 6254, 6256	CKSSYB104K10
	[7038_0 BLOCK(U)]	
	SEMICONDUCTORS	
	IC6301	BCM7038KPB1G-B2
	MISCELLANEOUS	
D	F6301–6310	VTF1084
	F6312	ATX1058
	RESISTORS	
	R6302, 6346	RAB4CQ472J
	R6303–6305, 6308–6310	BCN1072
	R6313	RAB4CQ102J
	R6336	RAB4CQ101J
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C6301	ACH1442
	C6302–6306	BCG1059
E	C6307–6320	CKSSYB103K16
	C6321	ACH1421
	C6322–6357, 6361, 6364	CKSSYB104K10
	C6360, 6362, 6365, 6366	CKSSYB102K50
	C6367, 6368	CKSSYB104K10
	C6369	DCH1201
	[7038_1 BLOCK(U)]	
	SEMICONDUCTORS	
	Q6401	RN1901
F		
	MISCELLANEOUS	
	F6401–6412	VTF1084

Mark No.	Description	Part No.
	RESISTORS	
	R6401	RS1/16SS1002F
	R6402, 6404	RS1/16SS1101F
	R6405–6407, 6410–6412	RS1/16SS75R0F
	R6420	RAB4CQ102J
	R6444	BCN1071
	R6445	BCN1067
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C6401	DCH1201
	C6402	CCSSCH150J50
	C6403–6414	CKSSYB103K16
	C6416–6428	CKSSYB104K10
	[7038 DDR BLOCK(U)]	
	SEMICONDUCTORS	
	IC6601	LP2995M
	IC6602–6605	EDD2516AKTA-6B
	MISCELLANEOUS	
	L6601	BTX1039
	CAPACITORS	
	C6602, 6607–6611	CKSSYB103K16
	C6603–6606	CKSSYB104K10
	C6612, 6620, 6633, 6642	CKSSYB471K50
	C6613–6619, 6621, 6622	CKSSYB103K16
	C6624, 6625, 6627–6632	CKSSYB103K16
	C6634–6641, 6643, 6645	CKSSYB103K16
	C6648	CEHVKW331M6R3
	C6649–6651	BCG1059
	[DDR REG BLOCK(U)]	
	RESISTORS	
	R6783, 6788–6790, 6795	RAB4CQ101J
	R6784–6787, 6791–6794	RAB4CQ220J
	R6796, 6801, 6802, 6816	RAB4CQ101J
	R6797–6800, 6803–6806	RAB4CQ220J
	R6807–6809, 6811, 6839	RAB4CQ510J
	R6810, 6812–6815	RAB4CQ220J
	R6817–6820, 6824–6827	RAB4CQ220J
	R6821–6823, 6828, 6829	RAB4CQ101J
	R6830–6833, 6836–6838	RAB4CQ220J
	R6834, 6835	RAB4CQ101J
	R6840	RAB4CQ220J
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C6704–6711	CKSSYB103K16
	C6801–6803	DCH1201
	[7038 FLASH BLOCK(U)]	
	SEMICONDUCTORS	
	IC6901	TC7WH02FU
	IC6902	AGC1008
	IC6903	BR24L64F-W
	Q6901	2SA1586
	Q6902	UMD2N
	Q6903	2SC4116
	D6902, 6903	UDZS4R7(B)

Mark No.	Description	Part No.
MISCELLANEOUS		
L6901		LCTAW2R2J2520
F6901–6904		CTF1557
JA6901	MINI JACK	AKN1073
X6901		BSS1134
CN6901	80P CONNECTOR RCPT	BKP1159
RESISTORS		
R6912, 6913		RS1/16S3010F
R6952		RAB4CQ472J
Other Resistors		RS1/16SS###J
CAPACITORS		
C6901		DCH1201
C6902–6908		CCSSCH101J50
C6909		CKSRYB105K10
C6911, 6916		CCSSCH8R0D50
C6912, 6913		CCSSCH120J50
C6915, 6919		CKSSYB103K16
C6917, 6923, 6924		CKSSYB104K10
[DT VDEC BLOCK(U)]		
SEMICONDUCTORS		
IC7001		TVP5160PNP
IC7002		EDS1616AGTA-75-E
Q7004		2SC4116
MISCELLANEOUS		
F7001–7006		VTF1084
F7007		ATX1058
X7001		BSS1119
RESISTORS		
R7001–7003, 7009		RAB4CQ101J
R7004, 7005		BCN1072
R7010–7013		RAB4CQ510J
R7014		BCN1071
Other Resistors		RS1/16SS###J
CAPACITORS		
C7001–7003, 7005		DCH1201
C7006		CKSSYB102K50
C7014, 7015		CCSSCH100D50
C7016–7054		CKSSYB104K10
[DT AV BLOCK(U)]		
SEMICONDUCTORS		
IC7101		PCM1803DB
IC7102, 7104, 7107		NJM2068V
IC7103, 7106		NJM2746V
IC7105		R5520H001B
MISCELLANEOUS		
L7101, 7102		BTH1107
L7103, 7104		BTX1042
L7106		ATH1160
F7101–7103		VTF1084
JA7101	OPT. LINK OUT (12MB/S)	VKS1001
CN7101	CONNECTOR	AKM1276
RESISTORS		
R7103, 7119		RS1/16SS2402F
R7104, 7118		RS1/16SS1002F
R7107, 7109		RAB4CQ103J
R7110		RAB4CQ101J
R7144, 7145, 7151, 7152		RS1/16SS3302F
R7155, 7156, 7195, 7196		RS1/16SS3302F
Other Resistors		RS1/16SS###J
CAPACITORS		
C7102, 7165, 7174, 7177		DCH1165
C7103, 7109, 7110		DCH1201
C7107, 7108		CKSRYB105K10
C7111–7114		CCSRCH331J50
C7115, 7117, 7119, 7120		CKSSYB103K16
C7116, 7118		CKSSYB271K50
C7122–7124, 7130		CCSSCH220J50
C7125, 7131, 7148, 7154		CKSSYB391K50
C7127, 7128, 7150, 7151		CCSSCH560J50
C7132, 7133, 7155, 7156		CKSSYB103K16
C7135		ACH1421
C7136, 7138, 7166, 7167		CKSSYB104K10
C7139, 7140, 7162, 7163		CKSSYB821K50
C7145–7147, 7153		CCSSCH220J50
C7171–7173		CKSSYB104K10
[VIDEO BLOCK(U)]		
SEMICONDUCTORS		
IC7201		PE5436A
MISCELLANEOUS		
L7201		BTX1042
RESISTORS		
R7202, 7207, 7208, 7211		RAB4CQ0R0J
R7212, 7215		RAB4CQ472J
R7214, 7249		BCN1067
R7248		RAB4CQ470J
R7251		RAB4CQ101J
Other Resistors		RS1/16SS###J
CAPACITORS		
C7201–7206		CKSSYB104K10
C7208, 7209, 7211–7214		CKSSYB102K50
C7210		CKSSYB471K50
C7220		DCH1201
[POD BLOCK(U)]		
SEMICONDUCTORS		
IC7301		TC74LCX245FTS1
IC7302		CIMAXSP2L
IC7303		TC74LCX257FT
IC7304		TC74LCX244FTS1
IC7305, 7306		TC74LCX373FT
MISCELLANEOUS		
F7301, 7302		ATX1058
F7303		VTF1084
CN7301, 7302	40P CONNECTOR PBF	AKM1354
RESISTORS		
R7305, 7317, 7333–7335		RAB4CQ470J
R7323, 7339, 7342		BCN1067
R7336, 7338, 7343		RAB4CQ103J
R7337, 7341		RAB4CQ470J
R7340		RAB4CQ0R0J
R7344–7346		BCN1067
Other Resistors		RS1/16SS###J

Mark No.	Description	Part No.
	CAPACITORS	
	C7301–7303, 7305	CKSSYB102K50
A	C7304	CCSSCH680J50
	C7306–7315, 7319, 7320	CKSSYB104K10
	C7321–7323	CKSSYB102K50
	[7038_1 BLOCK(U)]	
	SEMICONDUCTORS	
	IC7401	NJM2370U09
	IC7402	NJM2871BF05
	IC7403	MM1563DF
	IC7405, 7406, 7408	NJM2846DL3-33
	IC7407	NJM2846DL3-18
B		
	D7402–7408	1SS355
	MISCELLANEOUS	
	L7401, 7403	BTX1042
	F7401	VTF1084
	RESISTORS	
	R7401, 7407	RS1/10S0R0J
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C7401, 7403, 7406–7408	CKSSYB104K10
C	C7405	CKSRYB104K16
	C7409	CKSQYB225K10
	C7412	CKSSYB103K16
	C7413	CKSSYB471K50
	C7415	CEHVKW470M16
	C7416	CEHVKW220M16
	C7417–7420, 7423, 7424	DCH1201
	C7421	BCG1060
	C7422, 7426, 7428	CKSRYB105K10
	C7427	BCG1059
	C7429	DCH1201
D		
	[7038_2 BLOCK(U)]	
	SEMICONDUCTORS	
	IC7501	PQ200WNA1ZPH
	IC7502–7505	R1224N102H
	IC7506	PST3628UR
	Q7501, 7502	2SA1586
	Q7503–7506	CPH6311
	Q7507	DTC124EUA
	Q7508–7510	RN1901
E	D7501–7504	D1FM3
	D7505	1SS355
	MISCELLANEOUS	
	L7501, 7504	ATH1161
	L7502, 7503	ATH1192
	L7505, 7506	BTX1042
	RESISTORS	
	R7502–7504	RS1/4S1R5J
	R7505, 7506	RS1/4S3R3J
	R7507, 7508	RS1/10S271J
	R7511, 7538	RS1/16SS2202F
F	R7530	RS1/16SS5102F
	R7531	RS1/16SS8201F
	R7532	RS1/16SS9101F

Mark No.	Description	Part No.
	R7533	RS1/16SS2402F
	R7539	RS1/16SS3302F
	R7550, 7565	RS1/16SS5602F
	R7551, 7566	RS1/16SS1202F
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C7501, 7502	ACH1442
	C7503	CKSSYB104K10
	C7504, 7508, 7513	CKSSYB103K16
	C7506, 7507	CKSSYB102K50
	C7509	CKSSYB332K50
	C7511, 7512, 7517, 7519	CKSRYB105K10
	C7514, 7516	CEHVKW101M6R3
	C7518, 7520, 7521, 7524	DCH1201
	C7522, 7523, 7525, 7528	CKSRYB105K10
	C7526, 7527, 7529, 7530	DCH1201
	[DSEL BLOCK(U)]	
	SEMICONDUCTORS	
	IC8001	PD6523A
	IC8002	TC74LCX125FT
	IC8003	TC74VCX574FT
	MISCELLANEOUS	
	L8001, 8002	BTX1042
	F8001, 8002	VTF1080
	⚠F8004	ATX1058
	X8001	ASS1194
	8001	ANH1645
	8002	AEB1417
	⚠8003	ADE1196
	RESISTORS	
	R8001–8003	ACN1251
	R8004–8006	BCN1071
	R8026, 8027	RAB4CQ101J
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C8001	CCSRCH221J50
	C8002	CKSSYB102K50
	C8003, 8006–8013	CCSSCH221J50
	C8004	CKSSYF104Z16
	C8005, 8014–8025, 8027	CKSSYB104K10
	C8026, 8028–8030	DCH1201
	[IP BLOCK(U)]	
	SEMICONDUCTORS	
	IC8101	PE5504B
	IC8102, 8103	EDS6432AFTA-75-E
	MISCELLANEOUS	
	L8101–8104	BTX1042
	F8101	ATX1058
	RESISTORS	
	R8101–8104, 8106–8110	BCN1067
	R8105	BCN1071
	R8111, 8116	ACN1246
	R8112–8115, 8117	ACN1251
	R8123	RAB4CQ103J
	R8135	RAB4CQ470J

Mark No.	Description	Part No.
R8136		RAB4CQ101J
Other Resistors		RS1/16SS###J

CAPACITORS

C8101		CKSSYB102K50
C8102, 8126		DCH1201
C8103–8106, 8108–8111		CCSSCH221J50
C8107, 8112–8120		CKSSYB104K10
C8121–8125, 8127–8129		CCSSCH221J50
C8134–8147		CKSSYB104K10

[MULTI BLOCK(U)]

SEMICONDUCTORS

IC8201		PEG121B
IC8202		AGC1007
IC8203		TC74VHC08FTS1

MISCELLANEOUS

L8201–8204		BTX1042

RESISTORS

R8201–8205		ACN1246
R8206–8208, 8255		ACN1251
R8214, 8215, 8248		RAB4CQ103J
R8225, 8245		BCN1071
R8246		BCN1073
R8249		RAB4CQ680J
R8250		RS1/10S0R0J
Other Resistors		RS1/16SS###J

CAPACITORS

C8202		CKSSYB102K50
C8203–8206, 8221–8234		CKSSYB104K10
C8207, 8240–8242		DCH1201
C8208–8220		CCSSCH221J50
C8235		BCG1059
C8239		CKSSYB104K10

[IF UCOM BLOCK(U)]

SEMICONDUCTORS

IC8301		AGC1016
IC8302		PST9230N
IC8303		TC74VHC08FTS1
IC8304		TC7W126FU
IC8305		TC74VHC00FTS1
IC8306		MAX3232CPW
IC8307		TC74VHC125FTS1
Q8303–8305		DTC124EUA
Q8306, 8307		2SA1586
D8301–8304		1SS355

MISCELLANEOUS

X8301		ASS1168
X8302		ASS1172
CN8301	9P D-SUB SOCKET	AKP1213

RESISTORS

R8322		RAB4CQ473J
R8348–8352		RAB4CQ103J
Other Resistors		RS1/16SS###J

CAPACITORS

C8301		CKSSYB472K25
C8302, 8303		CCSSCH220J50
C8305, 8321		CKSSYB471K50
C8306–8311, 8314–8320		CKSSYB104K10
C8312, 8313		DCH1201

[MAIN UCOM BLOCK(U)]

SEMICONDUCTORS

IC8401		MB91305PMC-G-BND
IC8402		AGC1006
IC8403		PST3628UR
IC8407		PQ200WNA1ZPH
IC8409		BR24L64F–W
IC8410, 8411		TC74VHC125FTS1
Q8401		2SJ461A
Q8402		DTC124EUA
Q8403, 8404		HN1K02FU
D8401		1SS355
D8402		SML-311UT

MISCELLANEOUS

K8401, 8402	TEST PIN	AKX9002
X8401		CSS1616
CN8401	50P CONNECTOR PBF	AKM1353

RESISTORS

R8401, 8402		ACN1248
R8411, 8466, 8467		RAB4CQ101J
R8447		RS1/16SS5602F
R8457, 8458		RS1/16S0R0J
R8463		RS1/16SS1502F
R8464		RS1/16SS4701F
R8465		RS1/16SS3301F
R8481		RS1/16SS2002F
Other Resistors		RS1/16SS###J

CAPACITORS

C8402–8413		CCSSCH470J50
C8414, 8415, 8418, 8419		CKSSYB102K50
C8417		CCSSCH221J50
C8420		CKSSYB472K25
C8421, 8425		CKSSYB103K16
C8427, 8462		DCH1165
C8430–8437, 8439–8445		CKSSYB104K10
C8452–8461, 8463		CKSSYB104K10

TANSHI ASSY(UBB)

SEMICONDUCTORS

Q8901		HN1B04FU
D8808–8810		1SS302
D8821		UDZS5R1(B)
TH8901		TH05-3H103F

MISCELLANEOUS

F8801–8807, 8821–8823		CTF1557
JA8801	3P VERTICAL PIN JACK	AKB1338
JA8803, 8805	2P VERTICAL PIN JACK	AKB1331
JA8806	JACK	VKN1449
JA8807	PIN JACK (9P3S)	AKB1334
JA8808, 8809	3P VERTICAL PIN JACK	AKB1332
JA8811	4 POLE MINI JACK	AKN1081
CN8802	50P CONNECTOR	AKM1349
CN8803	40P CONNECTOR	AKM1348

Mark No.	Description	Part No.
	RESISTORS	
	R8801, 8802	RS1/10S151J
A	R8811–8816, 8850, 8860	RS1/16S75R0F
	R8861, 8874–8876	RS1/16S75R0F
	R8880–8882, 8898	RS1/16S75R0F
	R8901	RS1/16S4701F
	R8911	RS1/16S102J
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C8801–8806, 8810–8812	CKSRYB105K10
	C8809, 8902	CKSSYF104Z16
	C8815	DCH1201
B	C8818, 8819	CKSSYB473K16
	C8820–8826, 8901	CKSSYB103K16
	C8832, 8833, 8843–8857	CKSRYB105K10
	C8858	ACH1454

POD ASSY(U)

	SEMICONDUCTORS	
	IC9001	BR24C21FJ
	IC9002	TC74VHC08FTS1
	IC9003	TC7WH123FU
C	Q9005	UMD2N
	D9001, 9002, 9007, 9008	UDZS5R6(B)
	D9003, 9009	1SS301
	MISCELLANEOUS	
	JA9001 PC CARD CONNECTOR	AKP1305
	CN9001, 9002 40P CONNECTOR	AKM1348
	CN9003 CONNECTOR	CKS3826
	CN9004 15P D-SUB SOCKET	AKP1214
	RESISTORS	
D	R9008, 9016–9020	RAB4CQ0R0J
	R9022–9026	RAB4CQ0R0J
	Other Resistors	RS1/16SS###J
	CAPACITORS	
	C9001, 9017–9020, 9200	DCH1201
	C9002, 9014, 9015	CKSSYF104Z16
	C9012, 9013	CCSRCH220J50
	C9016	CKSRYB105K10
	C9201	DCH1201
	[SIDE BLOCK(UBB)]	
E	**SEMICONDUCTORS**	
	D9105, 9106	UDZS9R1(B)
	MISCELLANEOUS	
	JA9101 PIN JACK (3P)	AKB1303
	JA9102 PIN JACK (3P)	AKB1305
	9102, 9103 SCREW TERMINAL	VNE1949
	RESISTORS	
	All Resistors	RS1/16SS###J
	CAPACITORS	
F	C9105, 9106	CKSRYB105K10
	C9114	CKSSYF104Z16

AUDIO ASSY

SEMICONDUCTORS	
IC3751	LA4625
IC3752	PQ120DNA1ZPH
IC3753	NJW1183GK1
Q3751, 3754, 3755, 3757	2SA1586
Q3756, 3759	2SC4116
Q3758, 3760	DTC124EUA
D3751	1SS355
MISCELLANEOUS	
KN3751, 3752 WRAPPING TERMINAL	VNF1084
CN3751 CONNECTOR	B3P-VH
3772, 3773	PMB30P100FNI
3774, 3775	VBB30P100FNI
RESISTORS	
R3803	RD1/2MMF2R2J
Other Resistors	RS1/16S###J
CAPACITORS	
C3752, 3753	CEHAT2R2M50
C3754, 3805	CFTLA103J50
C3755	CEHAT472M25
C3757	CEHAT471M25
C3758, 3760, 3796	CKSRYB103K50
C3759	CEHAT331M16
C3761, 3764, 3786, 3798	CEHAT101M16
C3762	CEHAT220M50
C3763	CEHATR47M50
C3766, 3780, 3783–3785	CEHAT1R0M50
C3767, 3770, 3781, 3782	CFTLA104J50
C3769, 3815	CKSRYB222K50
C3771–3774, 3787, 3789	CKSRYB224K16
C3775, 3777, 3788, 3790	CEHAT100M50
C3778	CFTLA334J50
C3779	CKSRYB822K50
C3791, 3799	CEHAT100M50
C3792–3795, 3806, 3807	CFTLA104J50
C3797, 3808, 3812, 3814	CEHAT1R0M50
C3800, 3801	CKSRYB224K16
C3811	CFTLA223J50
C3813	CFTLA104J50
C3816, 3817	ACH1456
C3818–3821	CCSRCH221J50
C3822–3825	CKSRYB682K50
C3826–3829	CKSRYF104Z50
⚠C3831, 3833, 3835, 3837	CCSRCH101J50
C3838, 3839	CEHAT4R7M50

SP TERMINAL ASSY

MISCELLANEOUS	
⚠F3901, 3902	ATF1224
JA3901 SPEAKER TERMINAL	AKE1061
RESISTORS	
All Resistors	RS1/16S###J

Mark No.	Description	Part No.
CAPACITORS		
	C3903, 3911, 3917, 3919	CKSRYB682K50
	C3904, 3912, 3918, 3920	CKSRYF104Z50
⚠	C3905, 3907, 3913, 3915	CCSRCH221J50
⚠	C3921–3924	CCSRCH221J50

SIDE KEY ASSY

MISCELLANEOUS		
⚠	L9501–9504	QTL1013
	S9501–9507	CSG1155
RESISTORS		
	All Resistors	RS1/16S###J
CAPACITORS		
	C9501	CKSRYF104Z16
	C9502, 9503	CCSRCH101J50

50 LED ASSY

SEMICONDUCTORS		
	D9651	TLRV1022
	D9652	SML512BC4T
RESISTORS		
	All Resistors	RS1/16S###J
CAPACITORS		
	C9651, 9652	CKSSYF103Z50

LED IR ASSY

SEMICONDUCTORS		
	IC9702	SBX3050-01
	Q9701	2SA1586
	D9701	1SS302
	D9703	SML-521MDW
MISCELLANEOUS		
	CN9701 CONNECTOR	AKP1303
RESISTORS		
	R9701, 9702, 9707, 9712	RS1/16S0R0J
	R9713	RS1/16S121J
	R9714	RS1/16S331J
	Other Resistors	RS1/16SS###J
CAPACITORS		
	C9701	CKSSYB102K50
	C9702	CKSSYF104Z16
	C9703	ACG7046
	C9704	CKSSYF103Z50
	All Resistors	RS1/16S###J

50 ADDRESS L ASSY

[50 ADR L LOGIC]

SEMICONDUCTORS		
	IC1601	PEE003B
MISCELLANEOUS		
	L1601	QTL1013
	CN1601 CONNECTOR	AKM1290
	CN1602 40P CONNECTOR	AKM1348
RESISTORS		
	R1601–1605	RS1/16SS1000F
	Other Resistors	RS1/16SS###J
CAPACITORS		
	C1601–1604, 1607	CKSSYF104Z16
	C1605, 1606	CKSSYB102K50
	C1608, 1609	CKSRYB105K6R3
	C1651–1656	ACG1105
	C1657–1662	CKSSYF104Z16
	C1664, 1666, 1668	CCSSCH390J50

[50 ADR L RESONANCE]

SEMICONDUCTORS		
	IC1720	TND307TD
	Q1710, 1711	QSZ2
	Q1731, 1741, 1751, 1761	HAT3041R
	Q1771, 1781	HAT3041R
	Q1790	2SA1163
	Q1791	RN1901
	D1710, 1737, 1747, 1757	1SS302
	D1731, 1741, 1751, 1761	UDZS15(B)
	D1734, 1744, 1754, 1764	EP05FA20
	D1736, 1738, 1746, 1748	1SS355
	D1756, 1758, 1766, 1768	1SS355
	D1767, 1777, 1787	1SS302
	D1771, 1781	UDZS15(B)
	D1774, 1784	EP05FA20
	D1776, 1778, 1786, 1788	1SS355
MISCELLANEOUS		
	L1730, 1740, 1750, 1760	ATH1199
	L1770, 1780	ATH1199
RESISTORS		
	R1710, 1711	RS1/16SS220J
	Other Resistors	RS1/16S###J
CAPACITORS		
	C1710	CKSYB105K25
	C1711	ACG1098
	C1730, 1740, 1750, 1760	ACG1137
	C1731, 1741, 1751, 1761	ACG1136
	C1770, 1780	ACG1137
	C1771, 1781	ACG1136

50 ADDRESS S ASSY

[50 ADR S LOGIC]

SEMICONDUCTORS		
	IC1801	PEE003B
MISCELLANEOUS		
	L1801	QTL1013
	CN1801 CONNECTOR	AKM1290
	CN1802 40P CONNECTOR	AKM1348
RESISTORS		
	R1801–1805	RS1/16SS1000F
	Other Resistors	RS1/16SS###J

Mark No.	Description	Part No.
	CAPACITORS	
	C1801–1804, 1807	CKSSYF104Z16
A	C1805, 1806	CKSSYB102K50
	C1808, 1809	CKSRYB105K6R3
	C1851–1855	ACG1105
	C1857–1861	CKSSYF104Z16
	C1864	CCSSCH390J50
	C1866	CCSSCH101J50
	[50 ADR S RESONANCE]	
	SEMICONDUCTORS	
	IC1920	TND307TD
B	Q1910, 1911	QSZ2
	Q1931, 1941, 1951, 1961	HAT3041R
	Q1971	HAT3041R
	Q1990	2SA1163
	Q1991	RN1901
	D1910, 1937, 1947, 1957	1SS302
	D1931, 1941, 1951, 1961	UDZS15(B)
	D1934, 1944, 1954, 1964	EP05FA20
	D1936, 1938, 1946, 1948	1SS355
	D1956, 1958, 1966, 1968	1SS355
	D1967, 1977	1SS302
C	D1971	UDZS15(B)
	D1974	EP05FA20
	D1976, 1978	1SS355
	MISCELLANEOUS	
	L1930, 1940, 1950, 1960	ATH1199
	L1970	ATH1199
	RESISTORS	
	R1910, 1911	RS1/16SS220J
	Other Resistors	RS1/16S###J
	CAPACITORS	
D	C1910	CKSYB105K25
	C1911	ACG1098
	C1930, 1940, 1950, 1960	ACG1137
	C1931, 1941, 1951, 1961	ACG1136
	C1970	ACG1137
	C1971	ACG1136

50 SCAN A ASSY

Mark No.	Description	Part No.
	SEMICONDUCTORS	
E	IC2801–2806	SN755870KPZT-P
	D2801	CRH01
	D2802–2807, 2809, 2811	1SS302
	D2810	1SS355
	MISCELLANEOUS	
	CN2801 13P CONNECTOR NONPCB	AKP1261
	CN2802 CONNECTOR	AKM1281
	CN2803 PH CONNECTOR	AKP1306
	RESISTORS	
	R2805, 2810, 2813, 2816	RAB4C221J
F	R2819, 2822	RAB4C221J
	Other Resistors	RS1/16S###J

Mark No.	Description	Part No.
	CAPACITORS	
	C2801, 2802, 2811, 2812	ACG1088
	C2803, 2813, 2823, 2833	CKSRYB105K6R3
	C2805–2807, 2815–2817	CCSRCH220J50
	C2808–2810, 2818–2820	CCSRCH151J50
	C2821, 2822, 2831, 2832	ACG1088
	C2825–2827, 2835–2837	CCSRCH220J50
	C2828–2830, 2838–2840	CCSRCH151J50
	C2841, 2842, 2851, 2852	ACG1088
	C2843, 2853	CKSRYB105K6R3
	C2845–2847, 2855–2857	CCSRCH220J50
	C2848–2850, 2858–2860	CCSRCH151J50

50 SCAN B ASSY

Mark No.	Description	Part No.
	SEMICONDUCTORS	
	IC2901–2906	SN755870KPZT-P
	IC2907	TC7SH08FUS1
	D2902–2908	1SS302
	D2909	1SS355
	MISCELLANEOUS	
	CN2901 CONNECTOR	AKM1281
	CN2902 PH CONNECTOR	AKP1306
	RESISTORS	
	R2903, 2908, 2911, 2914	RAB4C221J
	R2917, 2920	RAB4C221J
	Other Resistors	RS1/16S###J
	CAPACITORS	
	C2901, 2902, 2911, 2912	ACG1088
	C2903, 2913, 2923, 2933	CKSRYB105K6R3
	C2905–2907, 2915–2917	CCSRCH220J50
	C2908–2910, 2918–2920	CCSRCH151J50
	C2921, 2922, 2931, 2932	ACG1088
	C2925–2927, 2935–2937	CCSRCH220J50
	C2928–2930, 2938–2940	CCSRCH151J50
	C2941, 2942, 2951, 2952	ACG1088
	C2943, 2953, 2961	CKSRYB105K6R3
	C2945–2947, 2955–2957	CCSRCH220J50
	C2948–2950, 2958–2960	CCSRCH151J50

POWER SUPPLY UNIT

POWER SUPPLY UNIT has no service part.

A

B

C

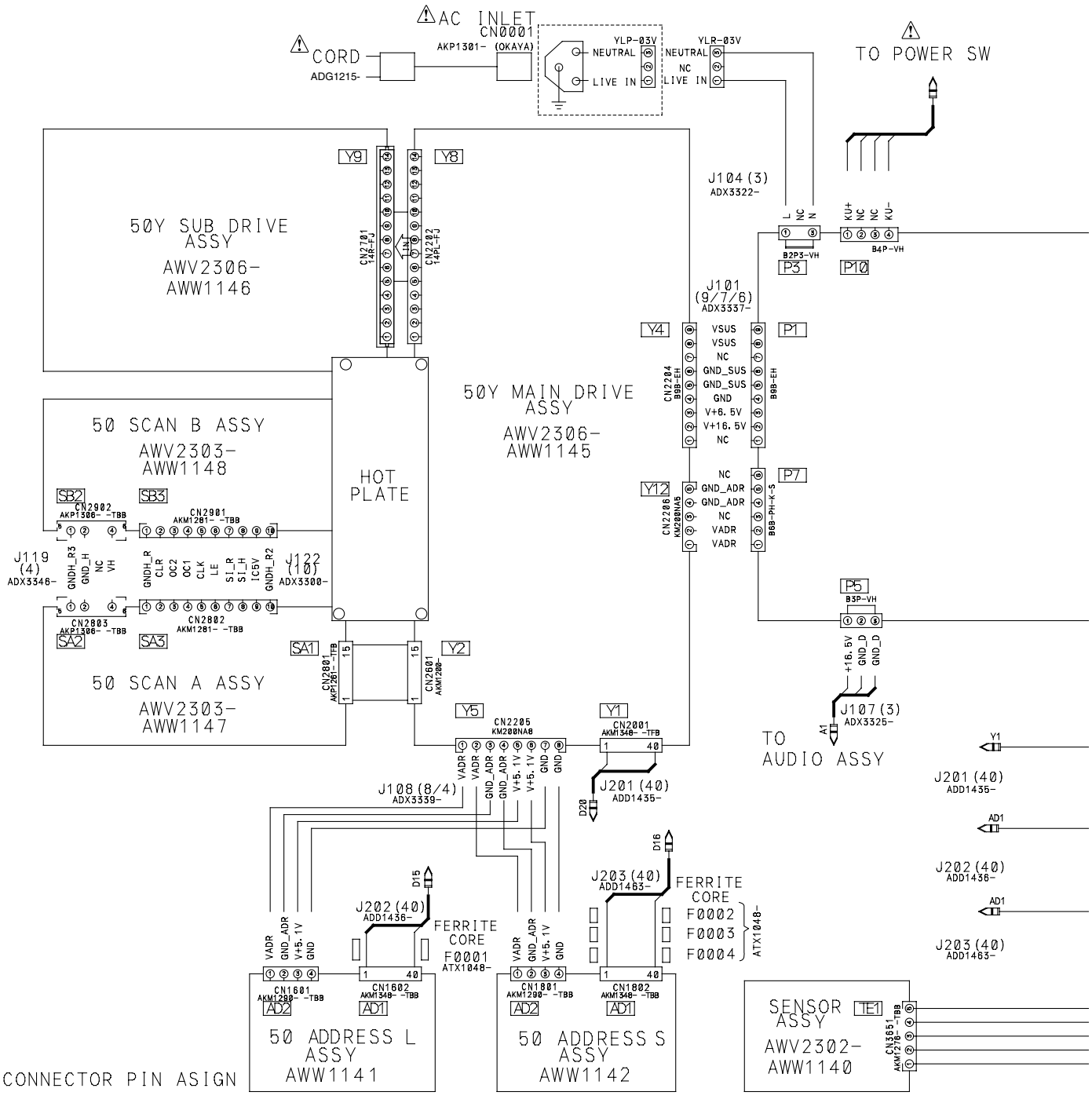
D

E

F

4. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

4.1 OVERALL CONNECTION DIAGRAM (1/2)



CONNECTOR PIN ASIGN

CN3501 D15 → CN1602 AD2

CN3502 D16 → CN1802 AD2

CN3503 D17 → CN1802 AD2

CN3504 D18 → CN1602 AD2

1→40. NC	21→20. CP
2→39. ADR_PD	22→19. NC
3→38. PSIZE	23→18. GND_LVDS
4→37. GND	24→17. NC
5→36. V+8V	25→16. RCLKN
6→35. V+8V	26→15. RCLKP
7→34. GND	27→14. NC
8→33. GND_LVDS	28→13. GND_LVDS
9→32. NC	29→12. NC
10→31. AN	30→11. DN
11→30. AP	31→10. DP
12→29. NC	32→ 9. NC
13→28. GND_LVDS	33→ 8. GND_LVDS
14→27. NC	34→ 7. GND
15→26. BN	35→ 6. V+3. 3V
16→25. BP	36→ 5. V+3. 3V
17→24. NC	37→ 4. GND
18→23. GND_LVDS	38→ 3. D1V1
19→22. NC	39→ 2. D1V0
20→21. CN	40→ 1. GND

CN3505 D19 ↓ CN1001 X1

1→18. PSW2	
2→17. XSUS_PD	
3→16. XDD_PD	
4→15. XDRV_PD	
5→14. GND	
6→13. SUS_MUTE	
7→12. XSUS_MSK	
8→11. GND	
9→10. XNR_D	
10→ 9. GND	
11→ 8. XSUS_G	
12→ 7. GND	
13→ 6. XSUS_D	
14→ 5. GND	
15→ 4. XSUS_U	
16→ 3. GND	
17→ 2. XSUS_B	
18→ 1. XCN_PD	

CN3506 D20 → CN2001 Y1

1→40. YCN_PD	21→20. GND
2→39. SCN5V_PD	22→19. YSUS_MSK
3→38. SI_L	23→18. YNRST
4→37. SI_H	24→17. YRsv2
5→36. GND	25→16. GND
6→35. CLR	26→15. YNOFS
7→34. CLK1	27→14. YRsv3
8→33. GND	28→13. YSOFT-D
9→32. LE	29→12. GND
10→31. OC2	30→11. VOFS_ADJ
11→30. OC1	31→10. YYPRST_ADJ
12→29. GND	32→ 9. GND
13→28. YSUS_B	33→ 8. GND
14→27. YSUS_U	34→ 7. GND
15→26. GND	35→ 6. GND
16→25. YSUS_D	36→ 5. VDD_PD
17→24. YSUS_G	37→ 4. YSUS_PD
18→23. GND	38→ 3. SCAN_PD
19→22. YPR-U	39→ 2. YDRV_PD
20→21. SUS_MUTE	40→ 1. PSW2

CN2601 Y2 ↓ CN2801 SA1

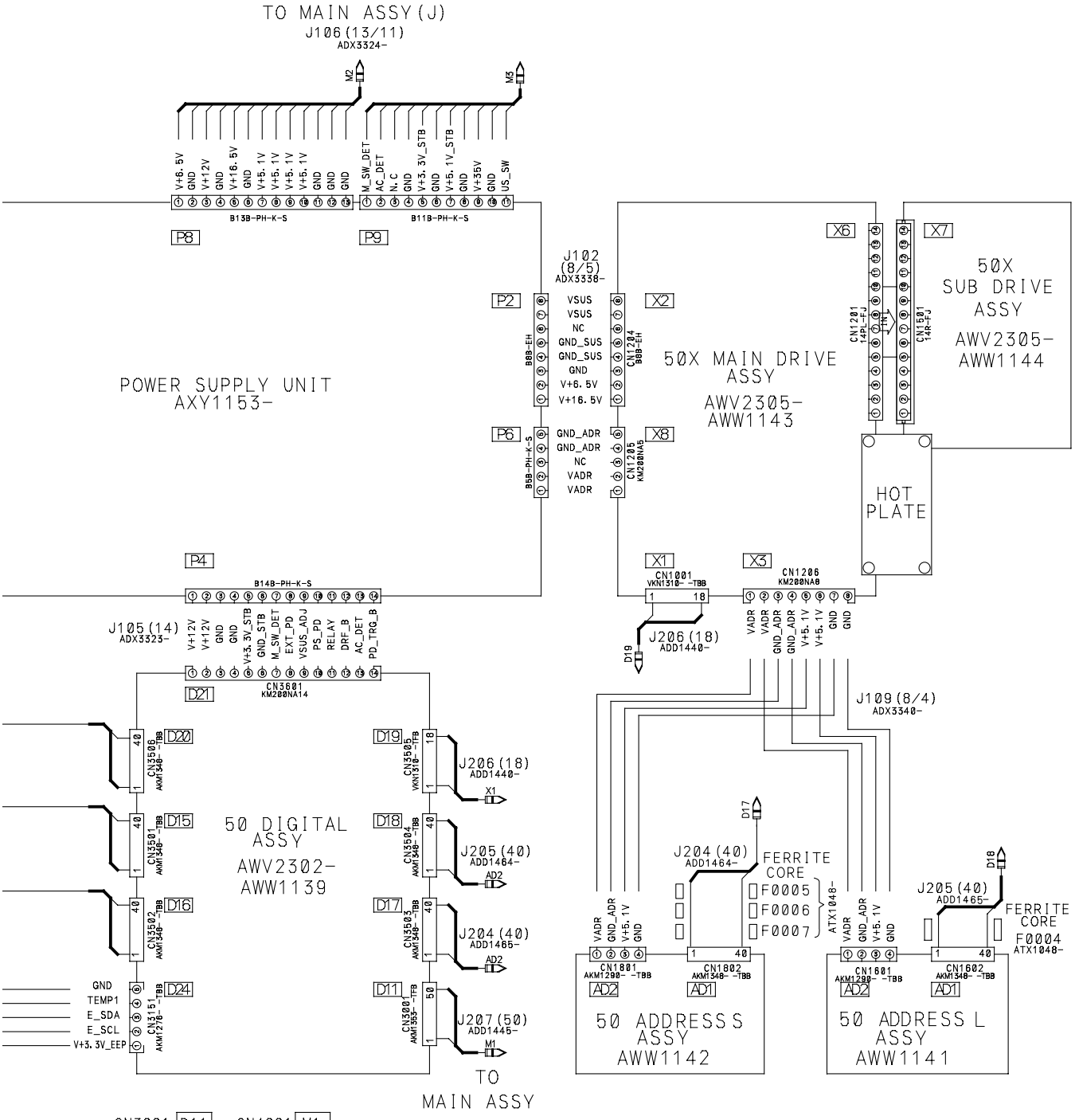
1. VH
2. VH
3. NC
4. NC
5. GNDH
6. SI_L
7. SI_H
8. CLR
9. OC2
10. OC1
11. CLK
12. LE
13. GNDH
14. GNDH_R
15. IC5V

CN2202 Y8 ↓ CN2701 Y9

1. MSK-G
2. MSK-S
3. NC
4. GND_SUS
5. SUS_G
6. GND_CN
7. NC
8. SUSOUT
9. SUS_B
10. SUSOUT
11. SUSOUT+15V
12. NC
13. VSUS
14. VSUS

CN1201 X6 ↓ CN1501 X7

1. MSK
2. PSUS
3. NC
4. GNDSUS
5. SUS_G
6. GND_CN
7. NC
8. SUSOUT
9. SUS_B
10. SUSOUT
11. SUSOUT+15V
12. NC
13. VSUS
14. VSUS

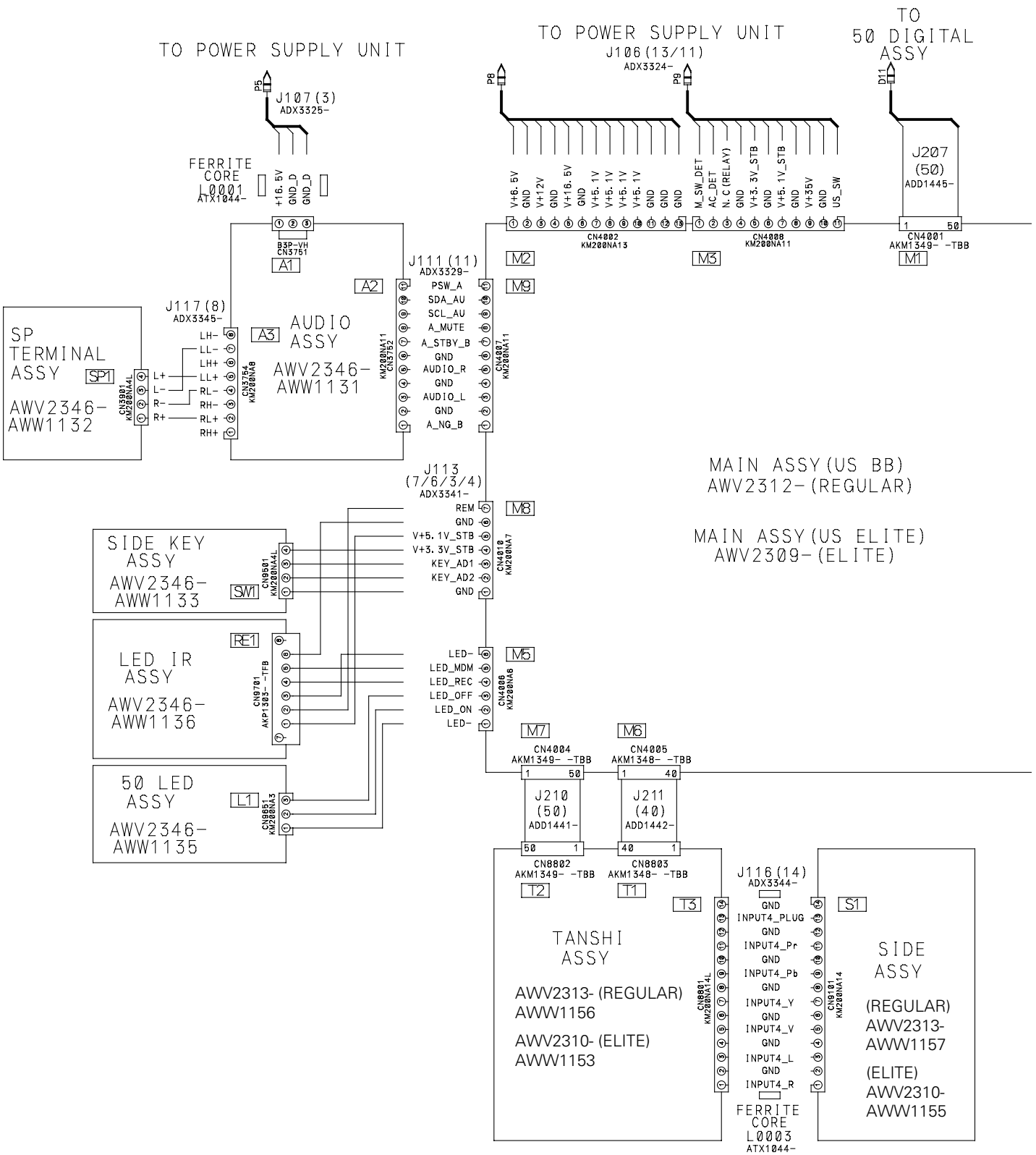


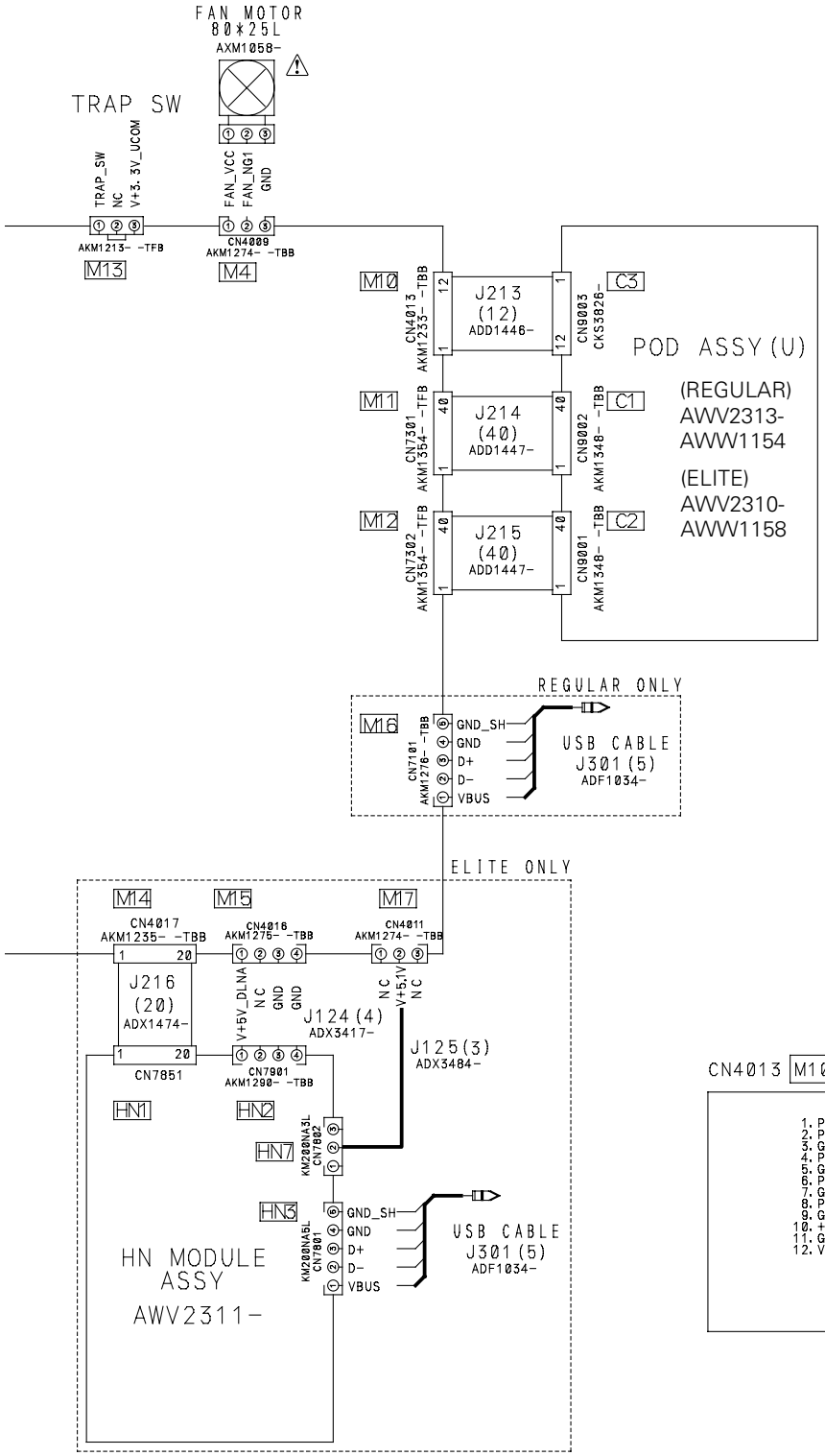
CN3001 D11 → CN4001 M1

1. GND	26. VIDEO_G6
2. V+3.3V_UCOM	27. VIDEO_G5
3. INP_MUTE	28. VIDEO_G4
4. THEATER	29. VIDEO_G3
5. VD	30. VIDEO_G2
6. HD	31. VIDEO_G1
7. DE	32. VIDEO_G0
8. GND	33. GND
9. CLK	34. VIDEO_B9
10. GND	35. VIDEO_B8
11. GND	36. VIDEO_B7
12. VIDEO_R9	37. VIDEO_B6
13. VIDEO_R8	38. VIDEO_B5
14. VIDEO_R7	39. VIDEO_B4
15. VIDEO_R6	40. VIDEO_B3
16. VIDEO_R5	41. VIDEO_B2
17. VIDEO_R4	42. VIDEO_B1
18. VIDEO_R3	43. VIDEO_B0
19. VIDEO_R2	44. GND
20. VIDEO_R1	45. RESERVE(N.C.)
21. VIDEO_R0	46. AC_OFF(N.C.)
22. GND	47. TXD_MD
23. VIDEO_G9	48. RXD_MD
24. VIDEO_G8	49. REQ_MD
25. VIDEO_G7	50. MODE

- When ordering service parts, be sure to refer to "EXPLODED VIEWS and PARTS LIST" or "PCB PARTS LIST".
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

4.2 OVERALL CONNECTION DIAGRAM (2/2)





CONNECTOR PIN ASIGN

CN4004 M7 → CN8802 T2

1→50. V+3.3V_UCOM	26→25. INPUT3_R
2→49. V+9V_A	27→24. GND
3→48. V+9V_A	28→23. INPUT3_L
4→47. TEMP_2	29→22. GND
5→46. GND	30→21. INPUT5_R
6→45. GND	31→20. GND
7→44. GND	32→19. INPUT5_L
8→43. GND	33→18. GND
9→42. GND	34→17. INPUT6_R
10→41. GND	35→16. GND
11→40. GND	36→15. INPUT6_L
12→39. INPUT2_SY	37→14. GND
13→38. INPUT2_SPLUG	38→13. INPUT3_Y
14→37. INPUT2_SZ	39→12. GND
15→36. INPUT2_SC	40→11. INPUT3_PB
16→35. GND	41→10. GND
17→34. INPUT2_V	42→ 9. INPUT3_PR
18→33. GND	43→ 8. GND
19→32. INPUT1_SY	44→ 7. INPUT2_PLUG
20→31. INPUT1_SPLUG	45→ 6. GND
21→30. INPUT1_SZ	46→ 5. INPUT2_Y
22→29. INPUT1_SC	47→ 4. GND
23→28. GND	48→ 3. INPUT2_PB
24→27. INPUT1_V	49→ 2. GND
25→26. GND	50→ 1. INPUT2_PR

CN4005 M6 → CN8803 T1

1→40. INPUT4_R	21→20. RXD_SR4
2→39. GND	22→19. TXD_SR4
3→38. INPUT4_L	23→18. SR_TN
4→37. GND	24→17. REM_B
5→36. INPUT4_V	25→16. GND
6→35. GND	26→15. MON_OUT_R
7→34. INPUT4_PR	27→14. GND
8→33. GND	28→13. MON_OUT_L
9→32. INPUT4_PB	29→12. GND
10→31. GND	30→11. SW_OUT
11→30. INPUT4_Y	31→10. GND
12→29. GND	32→ 9. INPUT2_R
13→28. INPUT4_PLUG	33→ 8. GND
14→27. V+5V_A	34→ 7. INPUT2_L
15→26. GND	35→ 6. GND
16→25. GND	36→ 5. INPUT1_R
17→24. PC_Rch	37→ 4. GND
18→23. GND	38→ 3. INPUT1_L
19→22. PC_Lch	39→ 2. GND
20→21. GND	40→ 1. MON_OUT_V

CN4013 M10 → CN9003 C3

1. PC_H	
2. PC_V	
3. GND	
4. PC_B	
5. GND	
6. PC_G	
7. GND	
8. PC_R	
9. GND	
10. +5V_A	
11. GND	
12. V+9V_A	

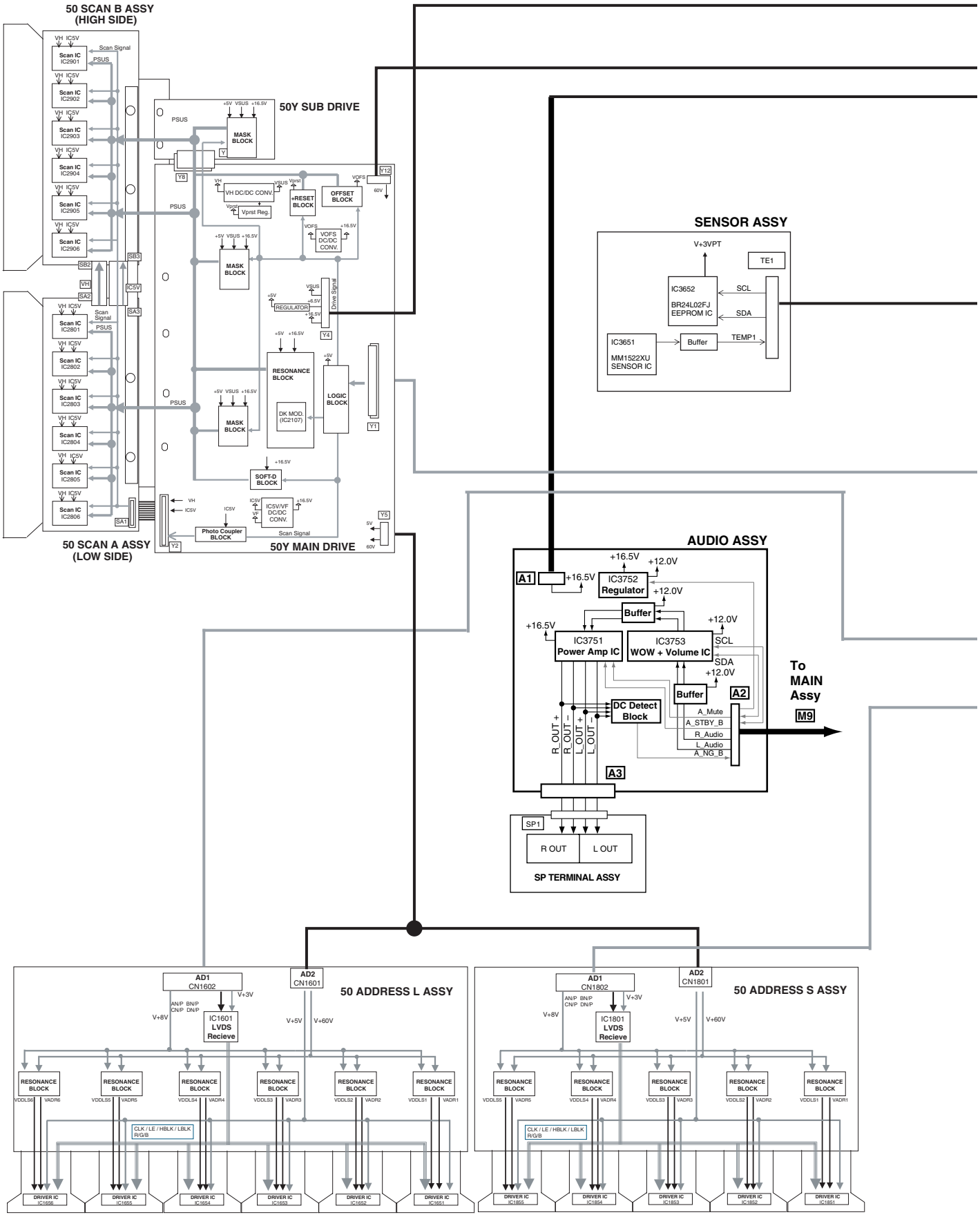
CN7301 M11 → CN9002 C1

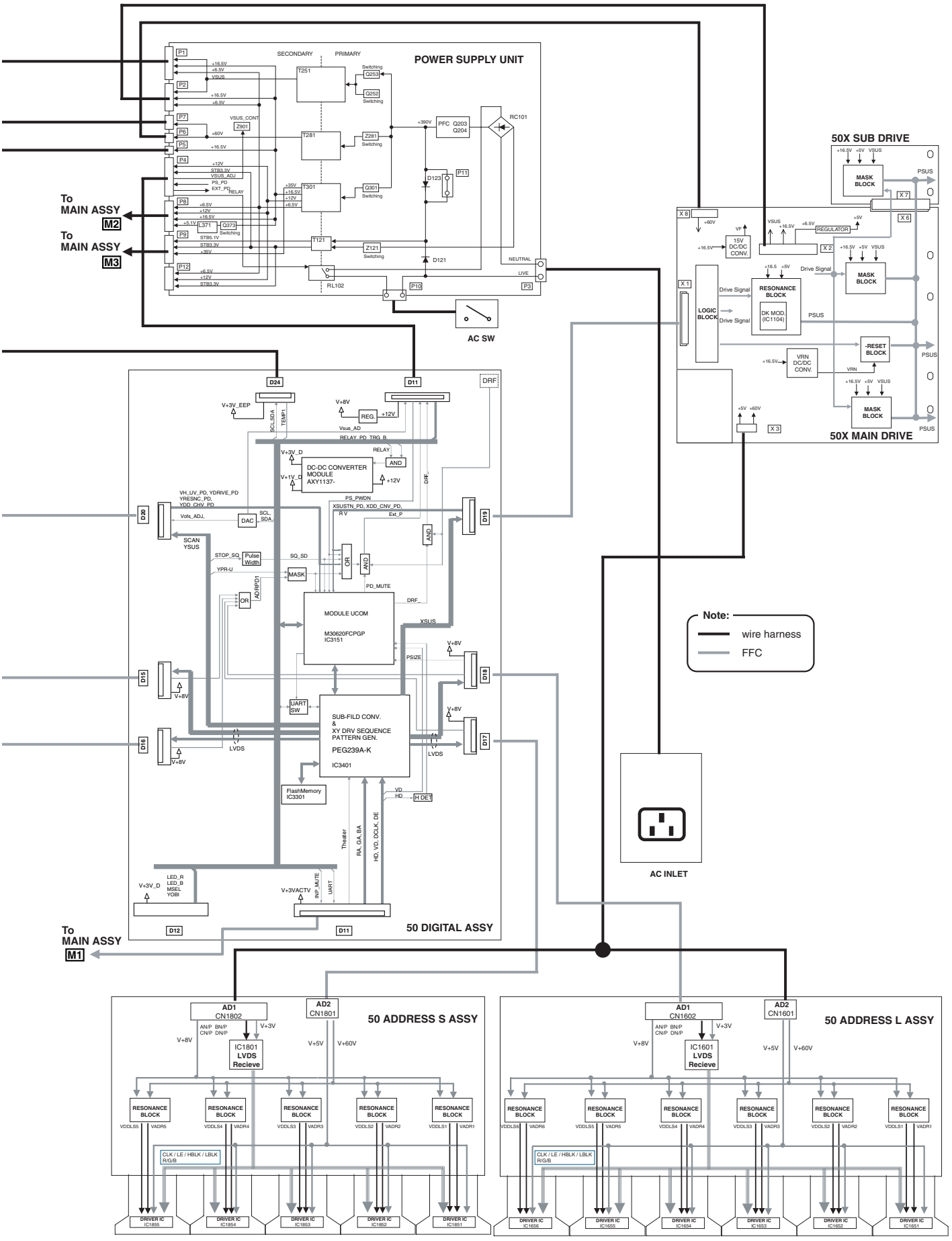
1. GND	21. POB_DATA
2. GND	22. IOWR
3. MD3	23. GND
4. CD1A	24. POB_CLK
5. MD4	25. GND
6. MDOA3	26. MISTRTA
7. MD5	27. MA13
8. MDOA4	28. MDIA0
9. MD6	29. GND
10. MDOA5	30. MOCLKA
11. MD7	31. GND
12. MDOA6	32. MDIA1
13. CE1A	33. WE
14. MDOA7	34. MDIA2
15. MA10	35. RDY_IRQA
16. CE2A	36. MDIA3
17. OE	37. POD_VCC
18. POD_VS1	38. POD_VCC
19. MA11	39. POD_VCC
20. IORD	40. GND

CN7302 M12 → CN9001 C2

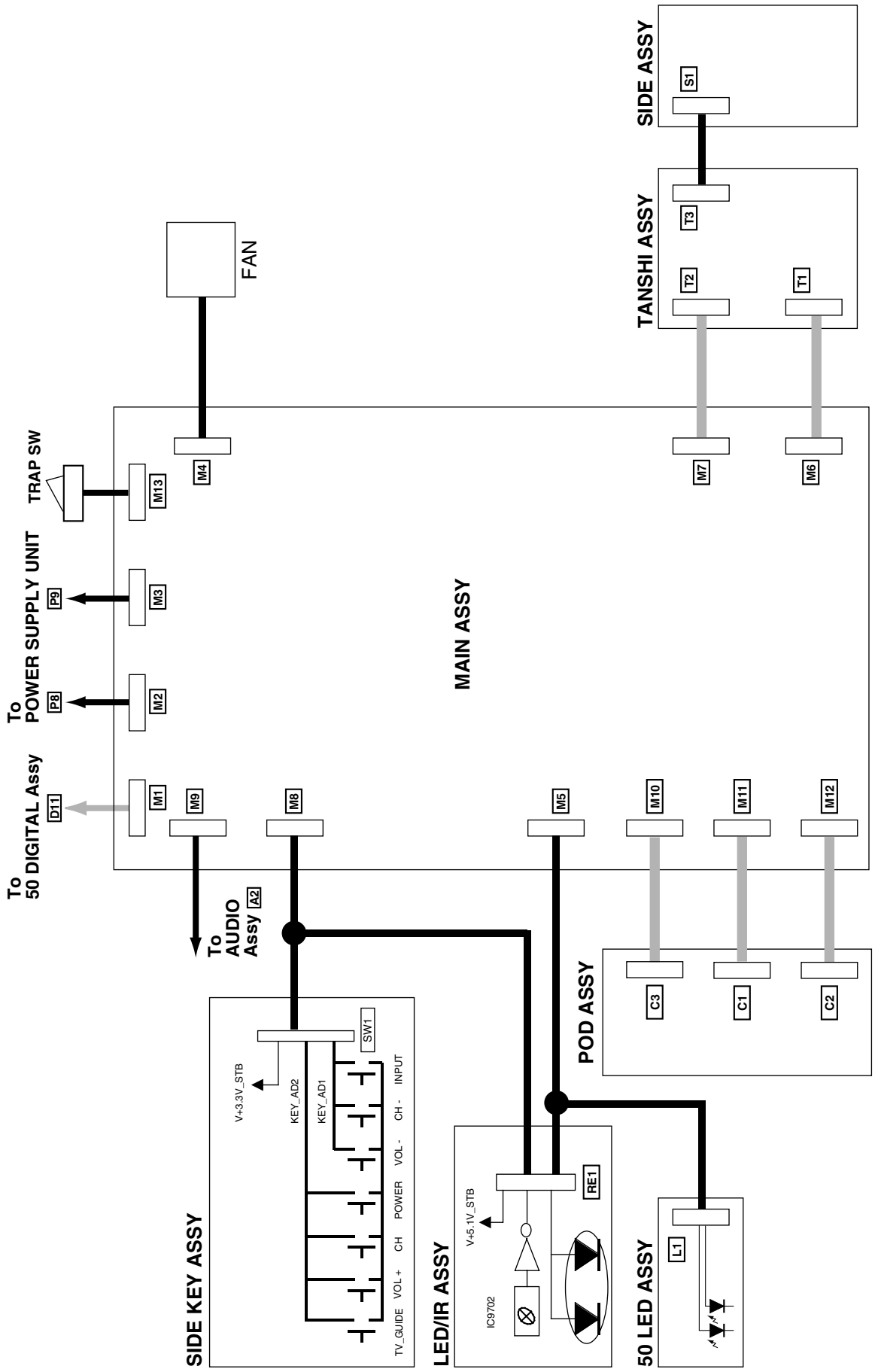
1. GND	21. MA3
2. GND	22. DSUB_DET
3. POD_VPP	23. MA2
4. POD_VPP	24. REG
5. MIVALA	25. MA1
6. MDIA4	26. MOVALA
7. GND	27. MA0
8. MICLKA	28. MOSTRTA
9. GND	29. MD0
10. MDIA5	30. MDOA0
11. MA12	31. MD1
12. MDIA6	32. MDOA1
13. TX_Q	33. MD2
14. MDIA7	34. MDOA2
15. TX_EN	35. WE_ROM
16. POD_VS2	36. CD2A
17. YX_I	37. GND
18. RSTA	38. V+3.3V_UCOM
19. OOB_EN	39. TEMP_2_P
20. WAITA	40. GND

4.3 OVERALL BLOCK DIAGRAM (1/2)



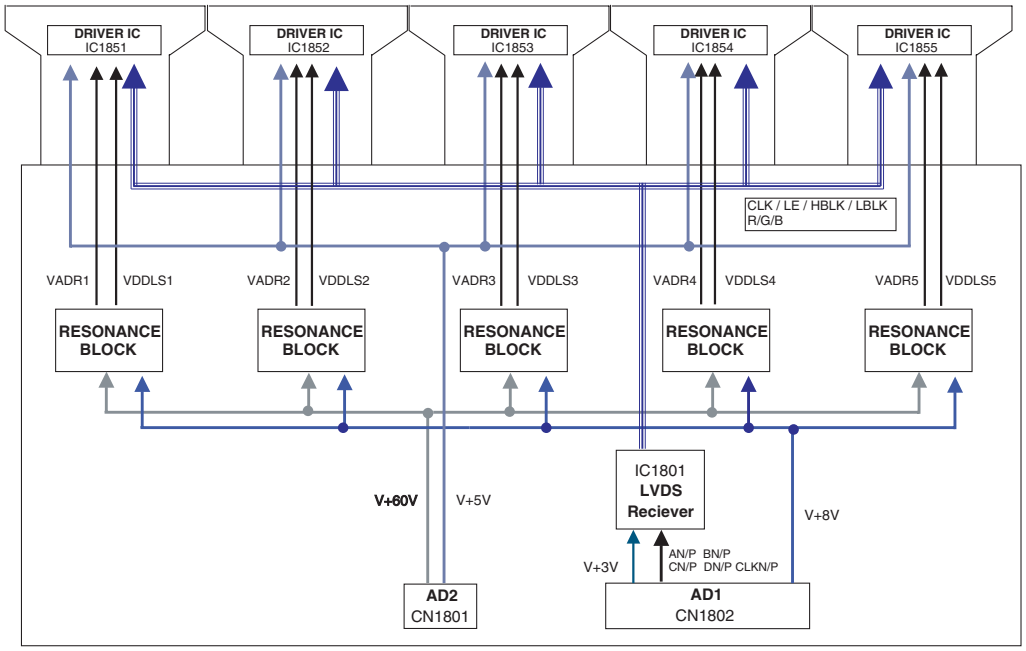

POWER SUPPLY UNIT
SECONDARY
PRIMARY
To MAIN ASSY M2
To MAIN ASSY M3
AC SW
50X SUB DRIVE
50X MAIN DRIVE
MASK BLOCK
RESONANCE BLOCK
LOGIC BLOCK
15V DC/DC CONV.
REGULATOR
-RESET BLOCK
VRN DC/DC CONV.
DC-DC CONVERTER MODULE AXY1137-
MODULE UCOM
M30620FCPGP
IC3151
SUB-FILD CONV. & XY DRV SEQUENCE PATTERN GEN.
PEG239A-K
IC3401
FlashMemory IC3301
50 DIGITAL ASSY
AC INLET
Note:
wire harness
FFC
50 ADDRESS S ASSY
50 ADDRESS L ASSY
IC1801 LVDS Recieve
IC1601 LVDS Recieve
RESONANCE BLOCK
DRIVER IC

4.4 OVERALL BLOCK DIAGRAM (2/2)

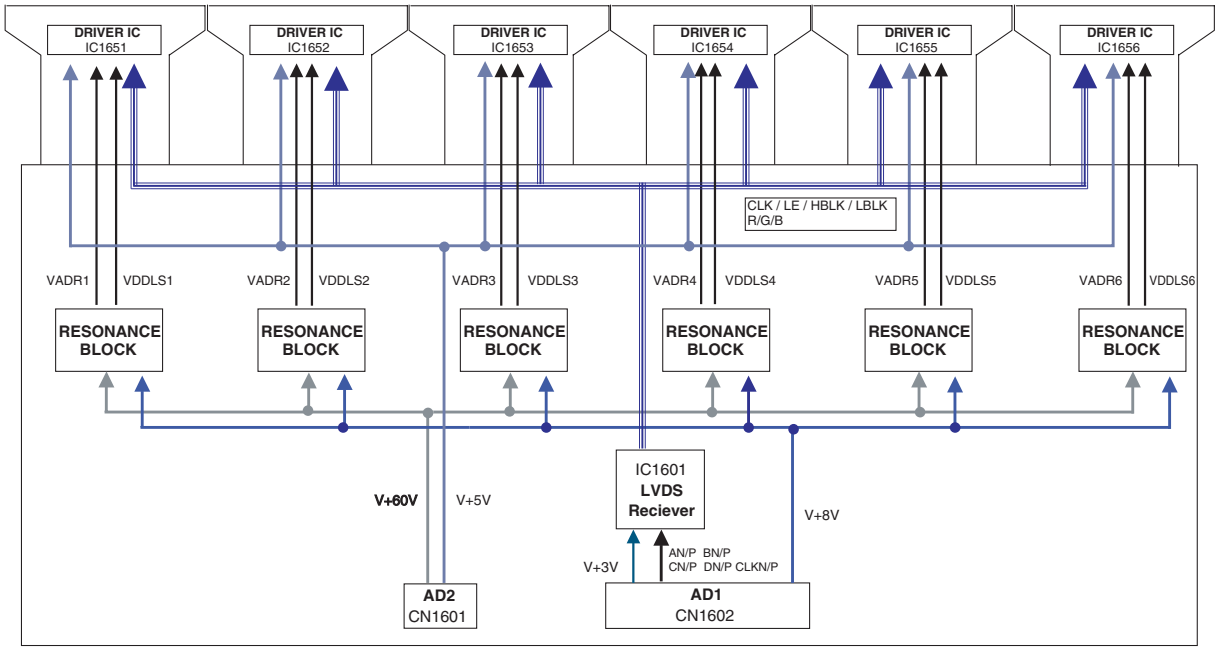


4.5 50 ADDRESS S and L ASSYS

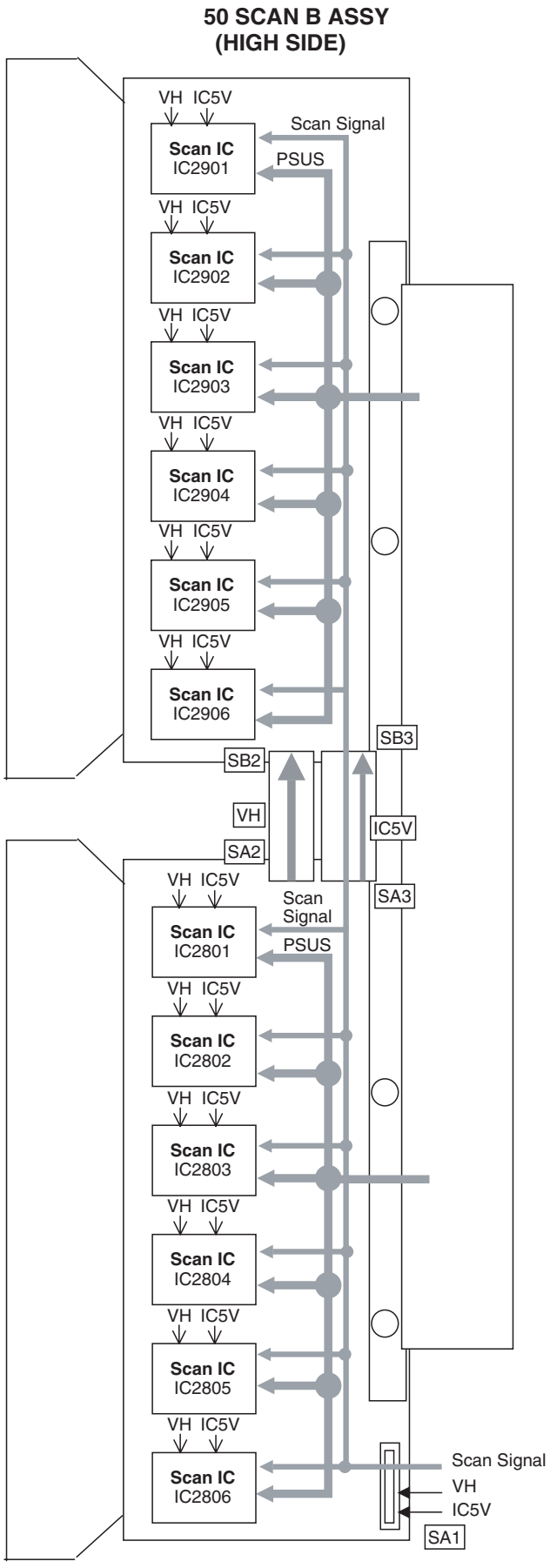
50 ADDRESS S ASS'Y



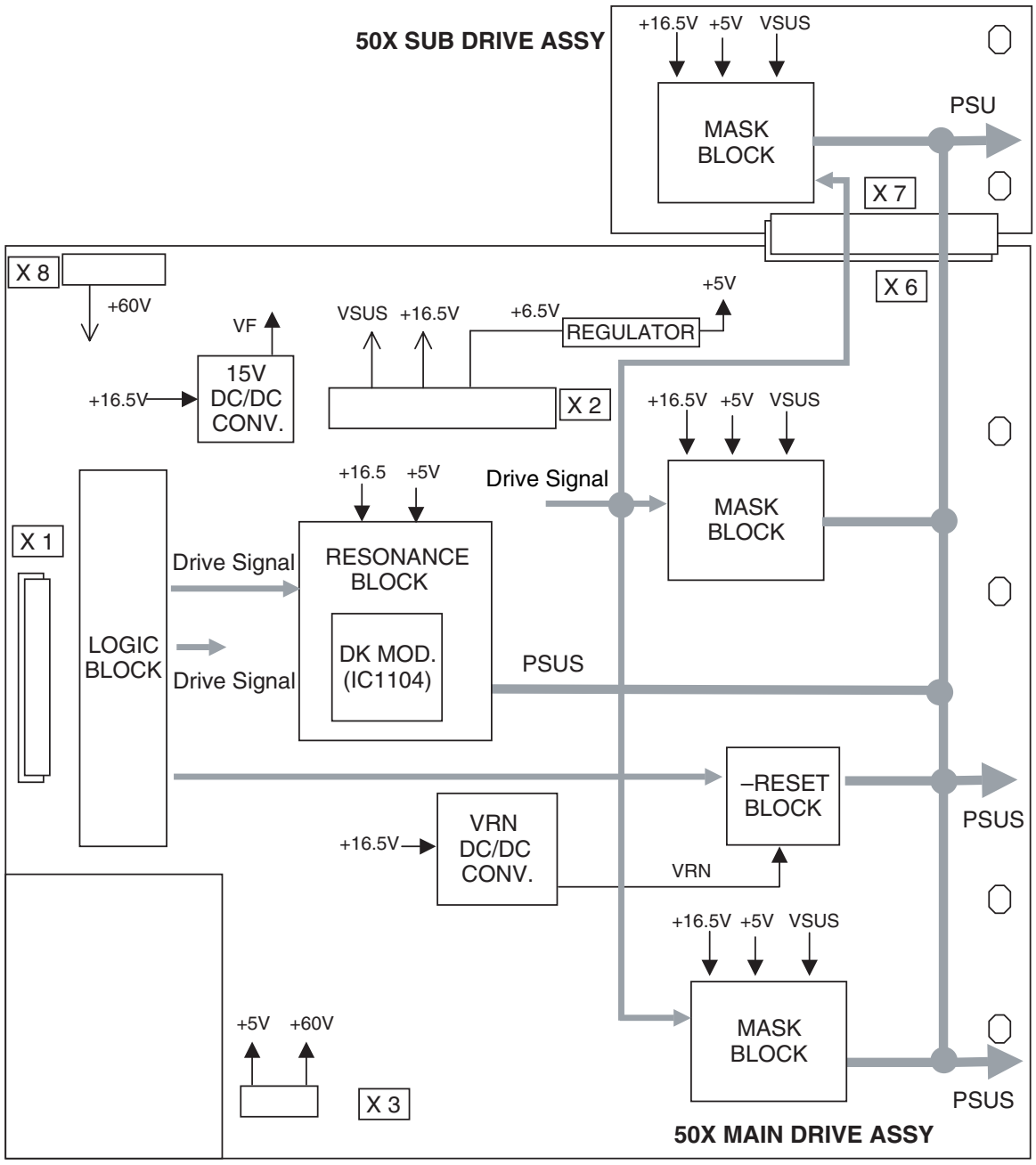
50 ADDRESS L ASS'Y



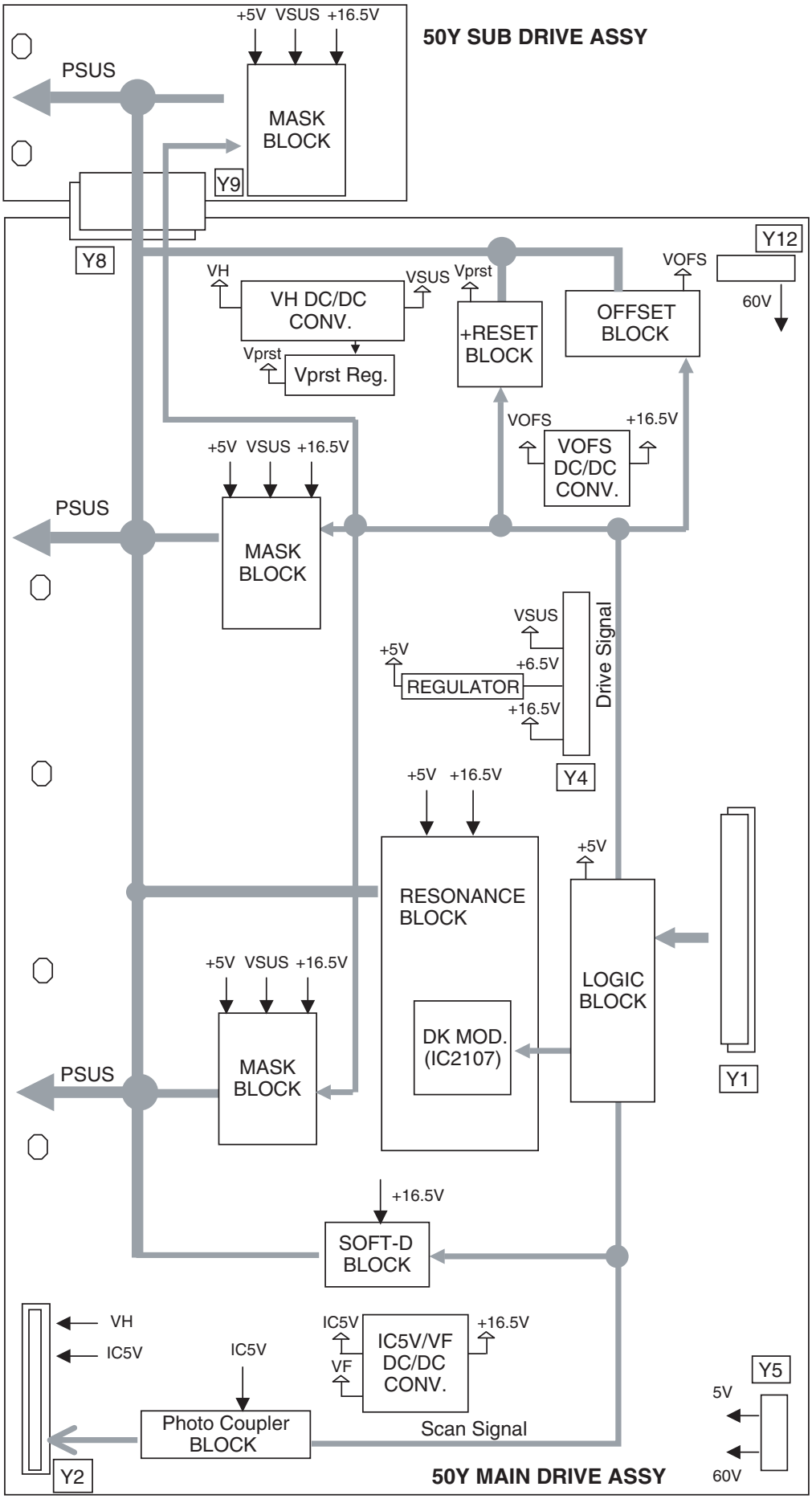
4.6 50 SCAN A and B ASSYS



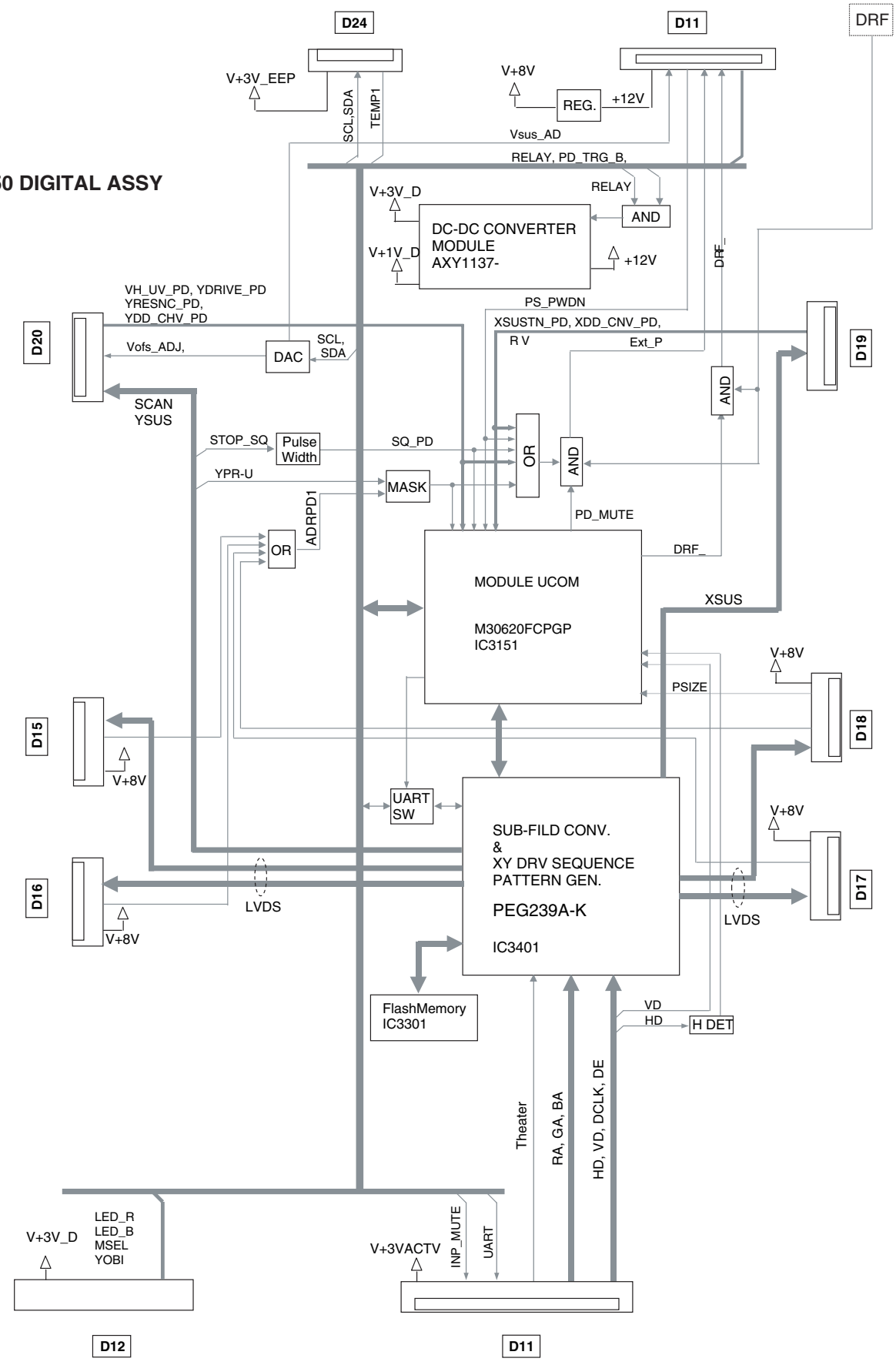
4.7 50X MAIN DRIVE and 50X SUB DRIVE ASSYS



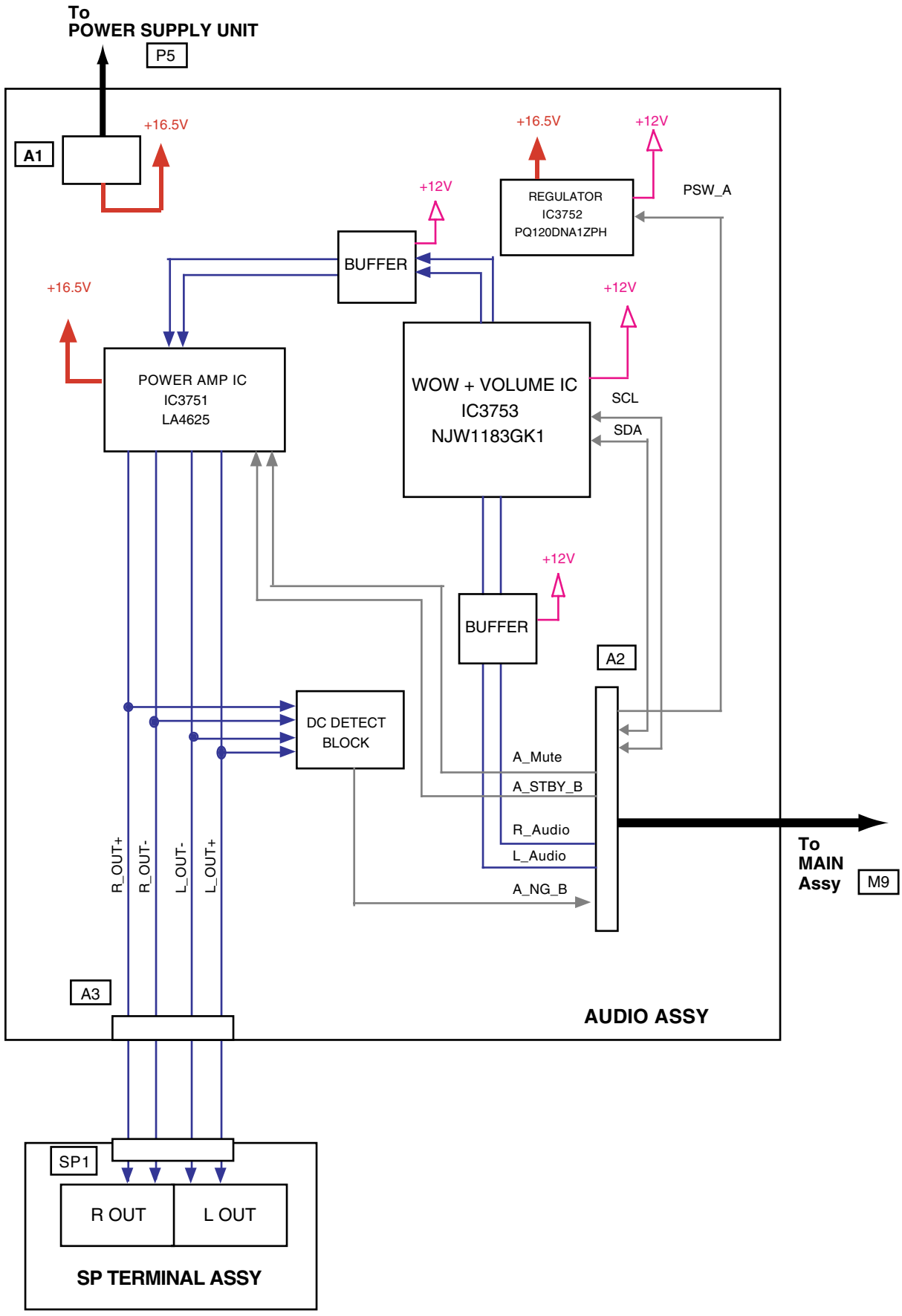
4.8 50Y MAIN DRIVE and 50Y SUB DRIVE ASSYS



4.9 50 DIGITAL ASSY



4.10 AUDIO ASSY



A

B

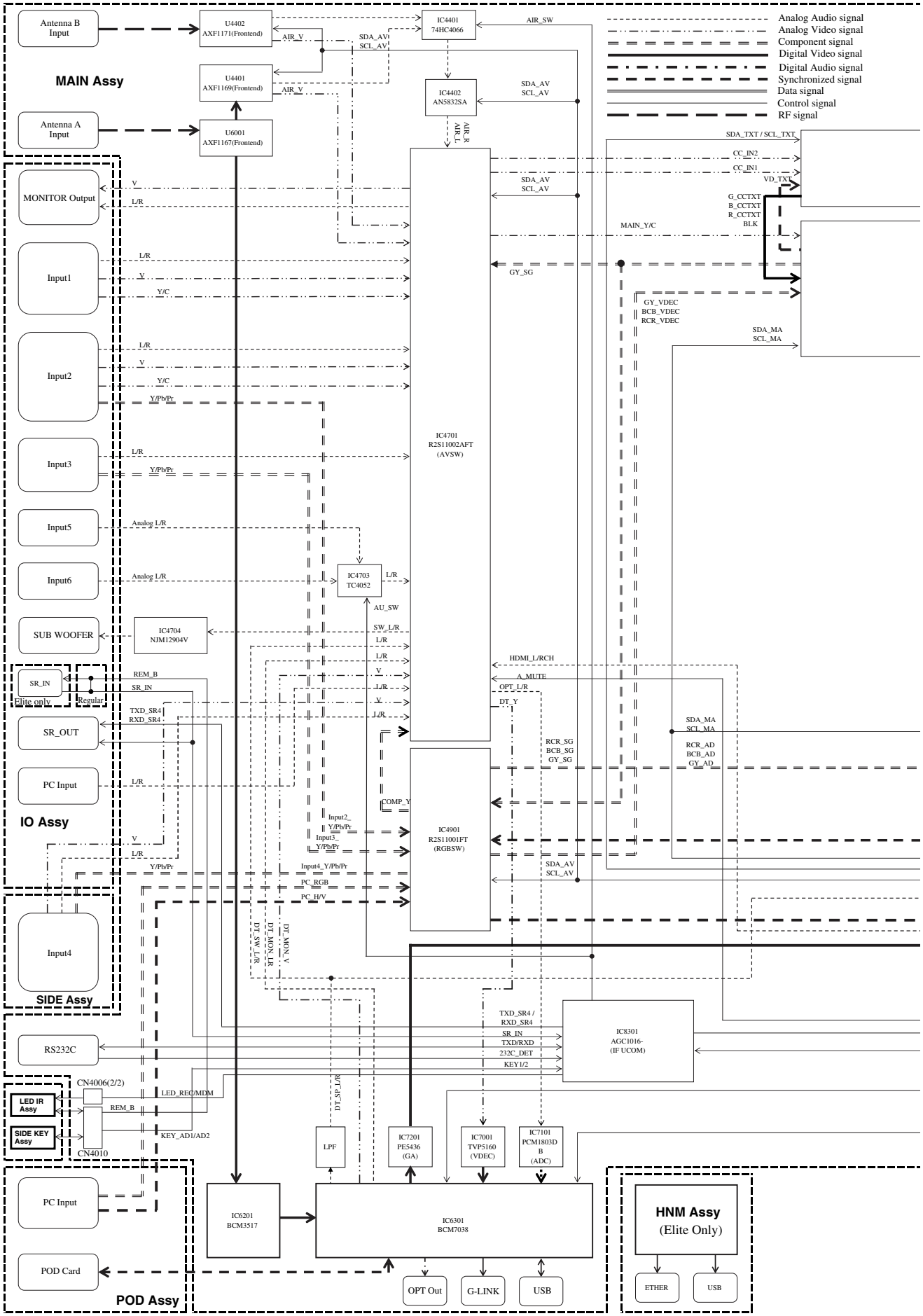
C

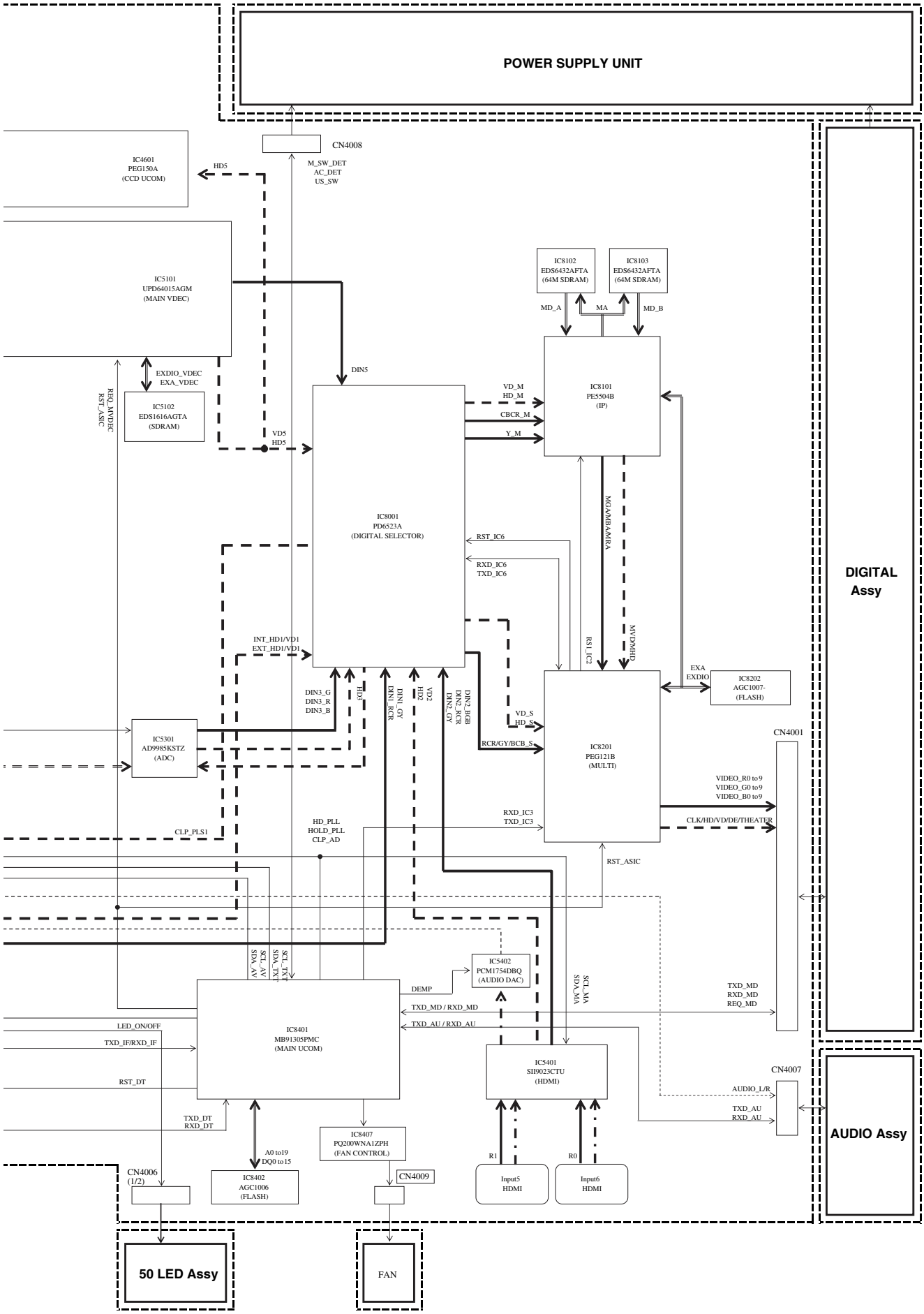
D

E

F

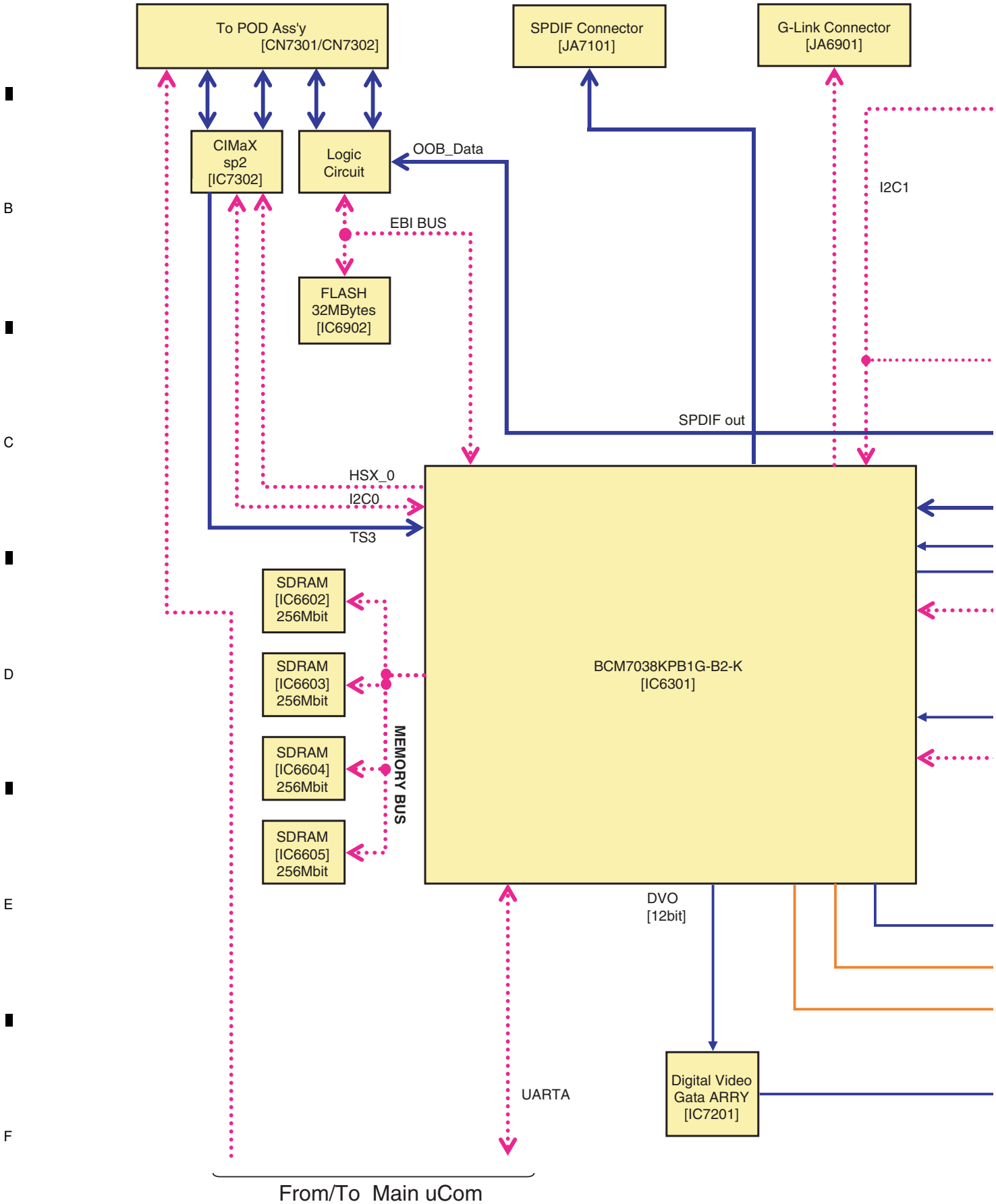
4.11 SIGNAL BLOCK DIAGRAM

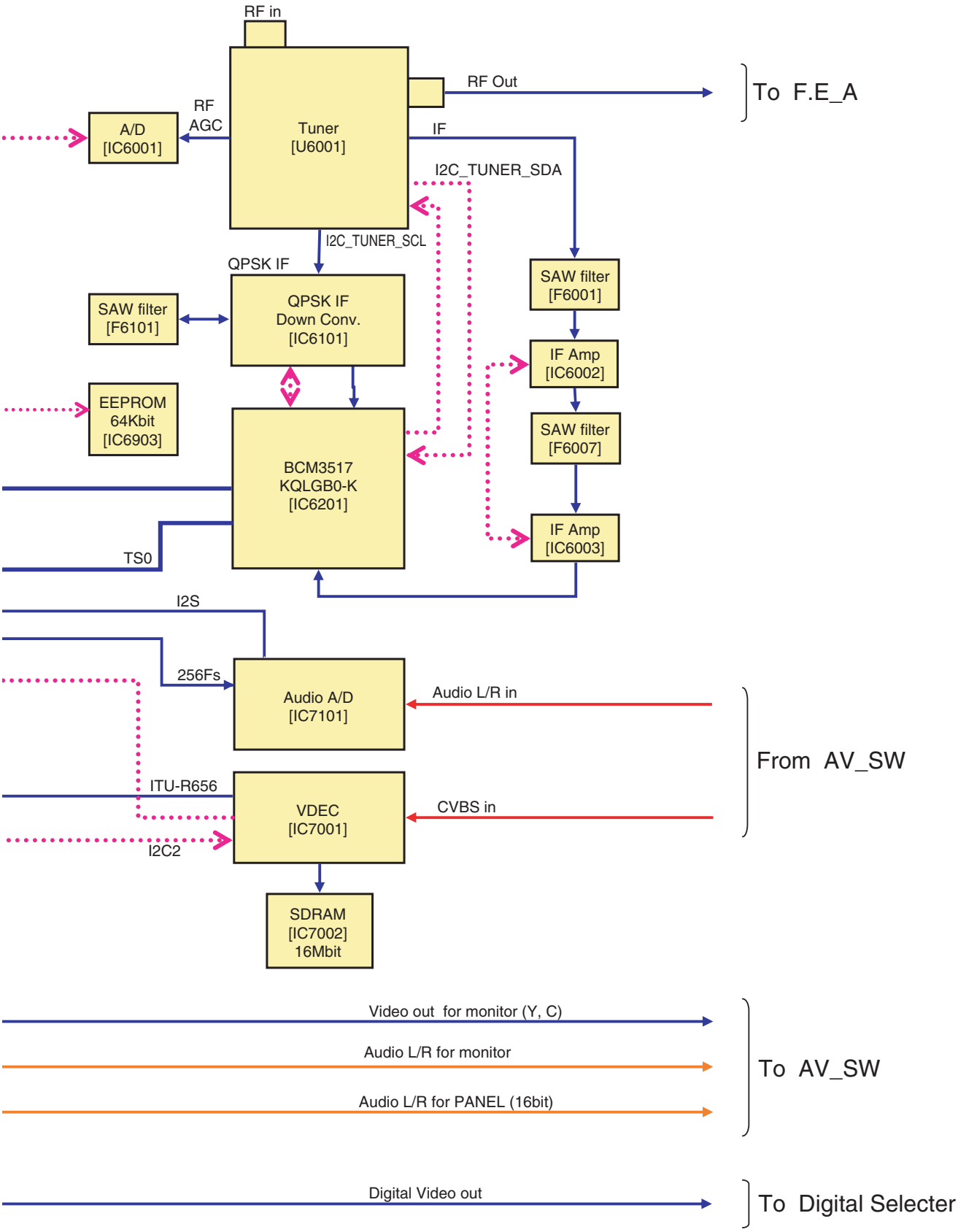



POWER SUPPLY UNIT
IC4601
PEG150A
(CCD UCOM)
HD5
CN4008
M_SW_DET
AC_DET
US_SW
IC5101
UPD64015AGM
(MAIN VDEC)
EXDIO_VDEC
EXA_VDEC
IC5102
EDS1616AGTA
(SDRAM)
REQ_MYDEC
RST_ASIC
DIN5
VD5
HD5
IC8102
EDS6432AFTA
(64M SDRAM)
IC8103
EDS6432AFTA
(64M SDRAM)
MD_A
MA
MD_B
IC8101
PE5504B
(IP)
VD_M
HD_M
CBCR_M
Y_M
IC8001
PD6523A
(DIGITAL SELECTOR)
RST_IC6
RXD_IC6
TXD_IC6
MGA/MBA/MRA
MYD/MHD
RS1_IC2
INT_HD1/VD1
EXT_HD1/VD1
DIN3_G
DIN3_R
DIN3_B
HD3
DIN1_RCR
DIN1_GY
VD2
HD2
DIN2_GY
DIN2_BCR
DIN2_RCR
VD_S
HD_S
RCR/GY/BCB_S
EXA
EXDIO
IC8202
AGC1007-
(FLASH)
IC5301
AD9985KSTZ
(ADC)
IC8201
PEG121B
(MULTI)
CN4001
VIDEO_R0 to 9
VIDEO_G0 to 9
VIDEO_B0 to 9
CLK/HD/VD/DE/THEATER
RXD_IC3
TXD_IC3
CLP_PLS1
HD_PLL
HOLD_PLL
CLP_AD
RST_ASIC
DIGITAL
Assy
SCL_AV
SDA_AV
SCL_TXT
SDA_TXT
IC5402
PCM1754DBQ
(AUDIO DAC)
DEMP
SCL_MA
SDA_MA
TXD_MD
RXD_MD
REQ_MD
TXD_MD / RXD_MD
TXD_AU / RXD_AU
LED_ON/OFF
TXD_IF/RXD_IF
RST_DT
IC8401
MB91305PMC
(MAIN UCOM)
IC5401
SII9023CTU
(HDMI)
CN4007
AUDIO_L/R
TXD_AU
RXD_AU
AUDIO Assy
TXD_DT
RXD_DT
A0 to19
DQ0 to15
IC8407
PQ200WNA1ZPH
(FAN CONTROL)
R1
R0
CN4006
(1/2)
IC8402
AGC1006
(FLASH)
CN4009
Input5
HDMI
Input6
HDMI
50 LED Assy
FAN

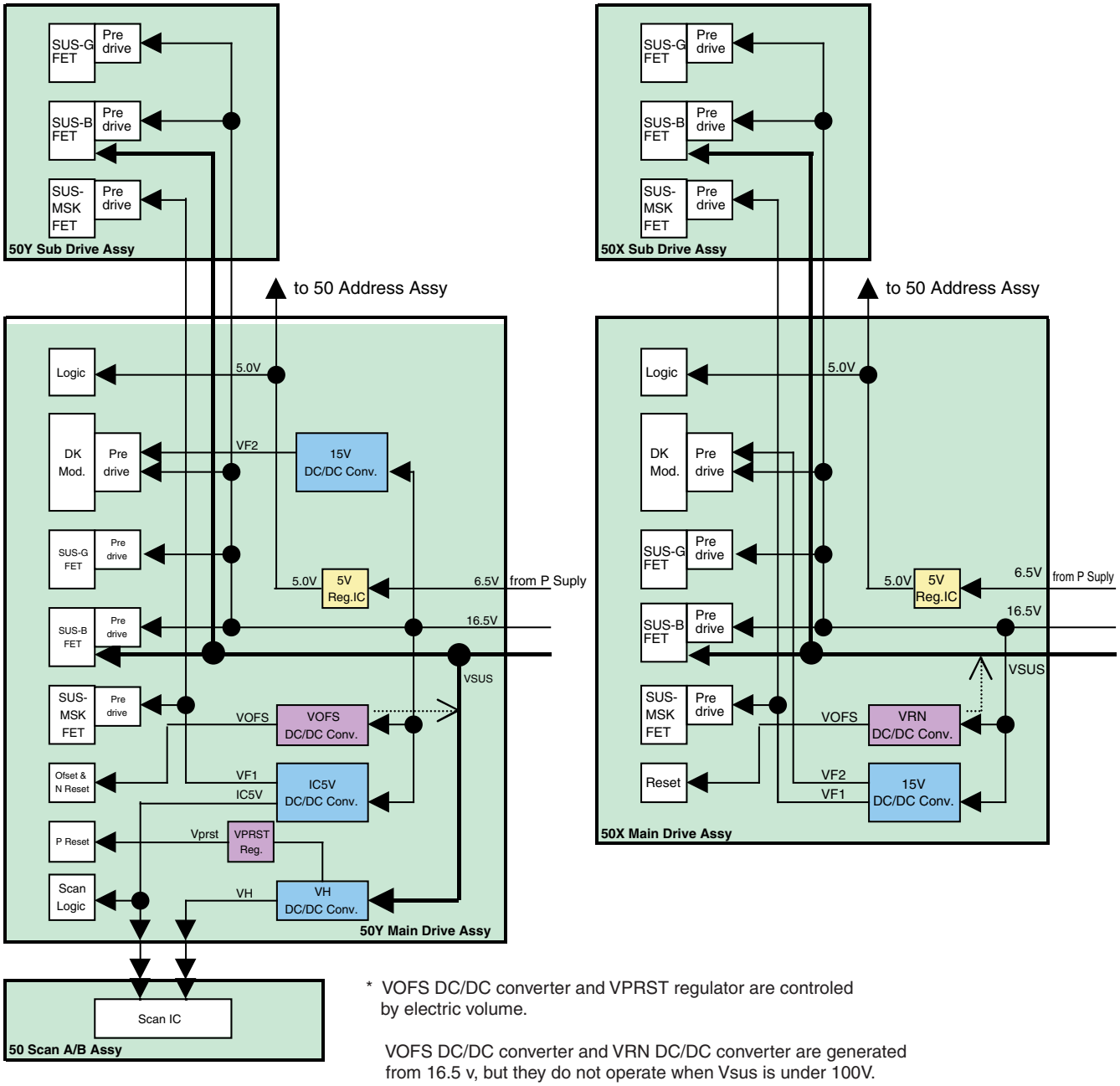
4.12 DTV BLOCK DIAGRAM

MTB American Digital Tuner Block R07SX (Block Diagram)




RF in
Tuner
[U6001]
RF Out
To F.E_A
RF
AGC
A/D
[IC6001]
IF
I2C_TUNER_SDA
I2C_TUNER_SCL
QPSK IF
QPSK IF
Down Conv.
[IC6101]
SAW filter
[F6101]
SAW filter
[F6001]
IF Amp
[IC6002]
SAW filter
[F6007]
IF Amp
[IC6003]
EEPROM
64Kbit
[IC6903]
BCM3517
KQLGB0-K
[IC6201]
TS0
I2S
256Fs
Audio A/D
[IC7101]
Audio L/R in
From AV_SW
ITU-R656
VDEC
[IC7001]
CVBS in
I2C2
SDRAM
[IC7002]
16Mbit
Video out for monitor (Y, C)
Audio L/R for monitor
Audio L/R for PANEL (16bit)
To AV_SW
Digital Video out
To Digital Selecter

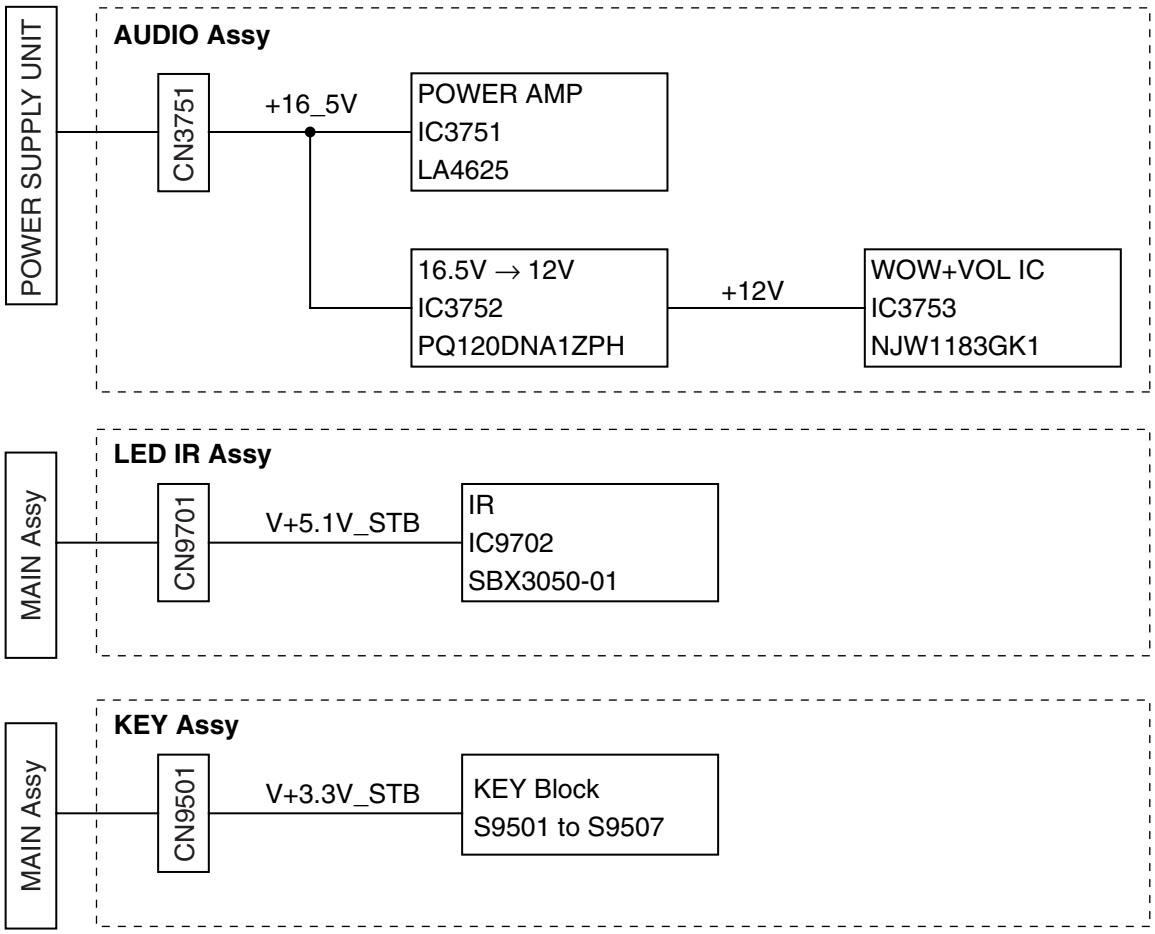
4.13 50 X/Y DRIVE POWER LINE BLOCK DIAGRAM



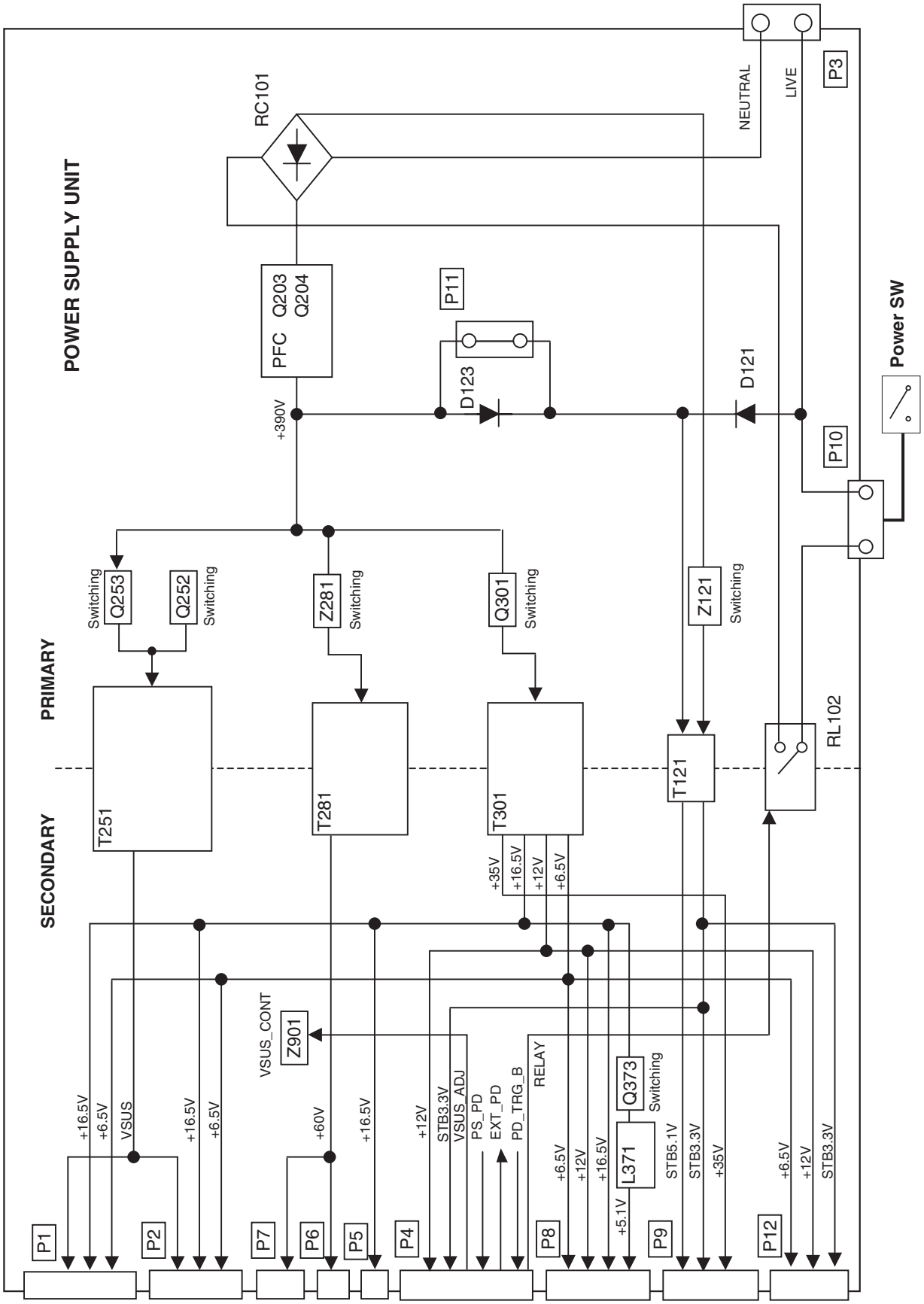
* VOFS DC/DC converter and VPRST regulator are controled by electric volume.

VOFS DC/DC converter and VRN DC/DC converter are generated from 16.5 v, but they do not operate when Vsus is under 100V.

4.14 FUKUGO BLOCK POWER LINE BLOCK DIAGRAM



4.15 POWER SUPPLY UNIT



4.16 VOLTAGES

[Voltage of the Drive Connector]

50Y MAIN DRIVE ASSY — POWER SUPPLY UNIT

Y4 CN2204(B9B-EH)		Voltage	P1 (B9B-EH)	
No.	Name	(V)	No.	Name
1	VSUS	205	1	VSUS
2	VSUS	205	2	VSUS
3	NC	-	3	N C
4	GND_SUS	0	4	GND_SUS
5	GND_SUS	0	5	GND_SUS
6	GND	0	6	GND
7	V+6.5V	5	7	V+6.5V
8	V+16.5V	16.5	8	V+16.5V
9	NC	-	9	N C

50Y MAIN DRIVE ASSY — 50 SCAN A ASSY

Y2 CN2601(AKM1200-)		Voltage	SA1 CN2801(AKM1261- -TFB)	
No.	Name	(V)	No.	Name
1	V H	GNDH+130	1	V H
2	V H	GNDH+130	2	V H
3	NC	-	3	NC
4	NC	-	4	NC
5	GNDH	-60 to 350	5	GNDH
6	SI_L	-60 to 350	6	SI_L
7	SI_H	-60 to 350	7	SI_H
8	CLR	-60 to 350	8	CLR
9	OC2	-60 to 350	9	OC2
10	OC1	-60 to 350	10	OC1
11	CLK	-60 to 350	11	CLK
12	LE	-60 to 350	12	LE
13	GNDH	-60 to 350	13	GNDH
14	GNDH_R	-60 to 350	14	GNDH_R
15	IC5V	-60 to 350	15	IC5V

50Y MAIN DRIVE ASSY — POWER SUPPLY UNIT

Y12 CN2206(KM200NA5)		Voltage	P7 (B6B-PH-K-S)	
No.	Name	(V)	No.	Name
1	VADR	60	1	VADR
2	VADR	60	2	VADR
3	N C	-	3	N C
4	GND_ADR	0	4	GND_ADR
5	GND_ADR	0	5	GND_ADR
			6	NC

50Y SUB DRIVE ASSY — 50Y MAIN DRIVE ASSY

Y9 CN2701(14R-FJ)		Voltage	Y8 CN2202(14PL-FJ)	
No.	Name	(V)	No.	Name
1	MSK-G	-60 to205	1	MSK-G
2	MSK-S	-60 to205	2	MSK-S
3	NC	-	3	NC
4	GND_SUS	0	4	GND_SUS
5	SUS_G	0	5	SUS_G
6	GND_CN	0	6	GND_CN
7	N C	-	7	N C
8	SUSOUT	0 to 205	8	SUSOUT
9	SUS_B	0 to 205	9	SUS_B
10	SUSOUT	0 to 205	10	SUSOUT
11	SUSOUT+15V	0 to 205	11	SUSOUT+15V
12	NC	-	12	NC
13	VSUS	205	13	VSUS
14	VSUS	205	14	VSUS

50X MAIN DRIVE ASSY — POWER SUPPLY UNIT

X2 CN1204(B8B-EH)		Voltage	P2 (B8B-EH)	
No.	Name	(V)	No.	Name
1	VSUS	205	1	VSUS
2	VSUS	205	2	VSUS
3	NC	-	3	NC
4	GND_SUS	0	4	GND_SUS
5	GND_SUS	0	5	GND_SUS
6	GND	0	6	GND
7	V+6.5V	5	7	V+6.5V
8	V+16.5V	16.5	8	V+16.5V

50X MAIN DRIVE ASSY — 50X SUB DRIVE ASSY

X6 CN1201(14PL-FJ)		Voltage	X7 CN1501(14R-FJ)	
No.	Name	(V)	No.	Name
1	MSK	-180 to 205	1	MSK
2	PSUS	-180 to 205	2	PSUS
3	NC	-	3	NC
4	GND_SUS	0	4	GND_SUS
5	SUS_G	0	5	SUS_G
6	GND_CN	0	6	GND_CN
7	NC	-	7	N C
8	SUSOUT	0 to 205	8	SUSOU
9	SUS_B	0 to 205	9	SUS_B
10	SUSOUT	0 to 205	10	SUSOUT
11	SUSOUT+15V	0 to 205	11	SUSOUT+15V
12	NC	-	12	N C
13	VSUS	205	13	VSUS
14	VSUS	205	14	VSUS

50X MAIN DRIVE ASSY — POWER SUPPLY UNIT

X8 CN1205(KM200NA5)		Voltage	P6 (B5B-PH-K-S)	
No.	Name	(V)	No.	Name
1	VADR	60	1	VADR
2	VADR	60	2	VADR
3	NC	-	3	NC
4	GND_ADR	0	4	GND_ADR
5	GND_ADR	0	5	GND_ADR

50Y MAIN DRIVE ASSY — 50 ADDRESS L ASSY — 50 ADDRESS S ASSY

Y5 CN2205(KM200NA8)		Voltage	AD1 CN1601(AKM1290- -TBB)		AD1 CN1801(AKM1290- -TBB)	
No.	Name	(V)	No.	Name	No.	Name
1	VADR	60	1	VADR		
2	VADR	60			1	VADR
3	GND_ADR	0	2	GND_ADR		
4	GND_ADR	0			2	GND_ADR
5	V+5.1V	5	3	V+5.1V		
6	V+5.1V	5			3	V+5.1V
7	GND	0	4	GND		
8	GND	0			4	GND

50X MAIN DRIVE ASSY — 50 ADDRESS S ASSY — 50 ADDRESS L ASSY

X3 CN1202(KM200NA8)		Voltage	AD1 CN1801(AKM1290- -TBB)		AD1 CN1601(AKM1290- -TBB)	
No.	Name	(V)	No.	Name	No.	Name
1	VADR	60	1	VADR		
2	VADR	60			1	VADR
3	GND_ADR	0	2	GND_ADR		
4	GND_ADR	0			2	GND_ADR
5	V+5.1V	5	3	V+5.1V		
6	V+5.1V	5			3	V+5.1V
7	GND	0	4	GND		
8	GND	0			4	GND

TANSHI Assy — MTB MAIN Assy

CN8802(AKM1349- -TBB) No.	Name	Voltage (V)	CN4004(AKM1349- -TBB) Name	No.
1	INPUT2_PR	2.5	INPUT2_PR	50
2	GND	0	GND	49
3	INPUT2_PB	2.5	INPUT2_PB	48
4	GND	0	GND	47
5	INPUT2_Y	2.5	INPUT2_Y	46
6	GND	0	GND	45
7	INPUT2_PLUG	2.5	INPUT2_PLUG	44
8	GND	0	GND	43
9	INPUT3_PR	2.5	INPUT3_PR	42
10	GND	0	GND	41
11	INPUT3_PB	2.5	INPUT3_PB	40
12	GND	0	GND	39
13	INPUT3_Y	2.5	INPUT3_Y	38
14	GND	0	GND	37
15	INPUT6_L	4.6	INPUT6_L	36
16	GND	0	GND	35
17	INPUT6_R	4.6	INPUT6_R	34
18	GND	0	GND	33
19	INPUT5_L	4.6	INPUT5_L	32
20	GND	0	GND	31
21	INPUT5_R	4.6	INPUT5_R	30
22	GND	0	GND	29
23	INPUT3_L	4.6	INPUT3_L	28
24	GND	0	GND	27
25	INPUT3_R	4.6	INPUT3_R	26
26	GND	0	GND	25
27	INPUT1_V	2.6	INPUT1_V	24
28	GND	0	GND	23
29	INPUT1_SC	2.1	INPUT1_SC	22
30	INPUT1_S2	0.2	INPUT1_S2	21
31	INPUT1_SPLUG	4.9	INPUT1_SPLUG	20
32	INPUT1_SY	2.6	INPUT1_SY	19
33	GND	0	GND	18
34	INPUT2_V	2.6	INPUT2_V	17
35	GND	0	GND	16
36	INPUT2_SC	2.1	INPUT2_SC	15
37	INPUT2_S2	0.2	INPUT2_S2	14
38	INPUT2_SPLUG	4.7	INPUT2_SPLUG	13
39	INPUT2_SY	2.3	INPUT2_SY	12
40	GND	0	GND	11
41	GND	0	GND	10
42	GND	0	GND	9
43	GND	0	GND	8
44	GND	0	GND	7
45	GND	0	GND	6
46	GND	0	GND	5
47	TEMP_2	2.2	TEMP_2	4
48	V+9V_A	9.2	V+9V_A	3
49	V+9V_A	9.2	V+9V_A	2
50	V+3.3V_UCOM	3.3	V+3.3V_UCOM	1

TANSHI Assy — MTB MAIN Assy

CN8803(AKM1348- -TBB) No.	Name	Voltage (V)	CN4005(AKM1348- -TBB) Name	No.
1	MON_OUT_V	1.5	MON_OUT_V	40
2	GND	0	GND	39
3	INPUT1_L	4.5	INPUT1_L	38
4	GND	0	GND	37
5	INPUT1_R	4.1	INPUT1_R	36
6	GND	0	GND	35
7	INPUT2_L	4.5	INPUT2_L	34
8	GND	0	GND	33
9	INPUT2_R	4.5	INPUT2_R	32
10	GND	0	GND	31
11	SW_OUT	0.5	SW_OUT	30
12	GND	0	GND	29
13	MON_OUT_L	0.7	MON_OUT_L	28
14	GND	0	GND	27
15	MON_OUT_R	1	MON_OUT_R	26
16	GND	0	GND	25
17	REM_B	4.8	REM_B	24
18	SR_IN	4.8	SR_IN	23
19	TXD_SR4	3.2	TXD_SR4	22
20	RXD_SR4	3.2	RXD_SR4	21
21	GND	0	GND	20
22	PC_LCH	4.6	PC_LCH	19
23	GND	0	GND	18
24	PC_RCH	4.6	PC_RCH	17
25	GND	0	GND	16
26	GND	0	GND	15
27	V+5V_A	4.9	V+5V_A	14
28	INPUT4_PLUG	4.9	INPUT4_PLUG	13
29	GND	0	GND	12
30	INPUT4_Y	2.5	INPUT4_Y	11
31	GND	0	GND	10
32	INPUT4_PB	2.5	INPUT4_PB	9
33	GND	0	GND	8
34	INPUT4_PR	2.5	INPUT4_PR	7
35	GND	0	GND	6
36	INPUT4_V	2.5	INPUT4_V	5
37	GND	0	GND	4
38	INPUT4_L	4.5	INPUT4_L	3
39	GND	0	GND	2
40	INPUT4_R	4.5	INPUT4_R	1

POD Assy — MTB MAIN Ass'y

CN9002(AKM1348- -TBB)		Voltage	CN7301(AKM1354- -TFB)	
No.	Name	(V)	Name	No.
1	GND	0	GND	1
2	GND	0	GND	2
3	MD3	0	MD3	3
4	CD1A	3.3	CD1A	4
5	MD4	3.3	MD4	5
6	MDOA3	0	MDOA3	6
7	MD5	0	MD5	7
8	MDOA4	0	MDOA4	8
9	MD6	3.3	MD6	9
10	MDOA5	0	MDOA5	10
11	MD7	3.3	MD7	11
12	MDOA6	0	MDOA6	12
13	CE1A	3.3	CE1A	13
14	MDOA7	0	MDOA7	14
15	MA10	0	MA10	15
16	CE2A	3.3	CE2A	16
17	OE	3.3	OE	17
18	POD_VS1	3.3	POD_VS1	18
19	MA11	0	MA11	19
20	IORD	3.3	IORD	20
21	POB_DATA	0	POB_DATA	21
22	IOWR	3.3	IOWR	22
23	GND	0	GND	23
24	POB_CLK	3.3	POB_CLK	24
25	GND	0	GND	25
26	MISTRTA	0	MISTRTA	26
27	MA13	3.3	MA13	27
28	MDIA0	0	MDIA0	28
29	GND	0	GND	29
30	MOCLKA	0	MOCLKA	30
31	GND	0	GND	31
32	MDIA1	0	MDIA1	32
33	WE	3.3	WE	33
34	MDIA2	0	MDIA2	34
35	RDY/IRQA	3.3	RDY/IRQA	35
36	MDIA3	0	MDIA3	36
37	VCC	3.3	VCC	37
38	VCC	3.3	VCC	38
39	VCC	3.3	VCC	39
40	GND	0	GND	40

POD Assy — MTB MAIN Assy

CN9001(AKM1348- -TBB)		Voltage	CN7302(AKM1354- -TFB)	
No.	Name	(V)	Name	No.
1	GND	0	GND	1
2	GND	0	GND	2
3	VPP	3.3	VPP	3
4	VPP	3.3	VPP	4
5	MIVALA	0	MIVALA	5
6	MDIA4	0	MDIA4	6
7	GND	0	GND	7
8	MICLKA	0	MICLKA	8
9	GND	0	GND	9
10	MDIA5	0	MDIA5	10
11	MA12	0	MA12	11
12	MDIA6	0	MDIA6	12
13	TX_Q	0	TX_Q	13
14	MDIA7	0	MDIA7	14
15	TX_EN	0	TX_EN	15
16	POD_VS2	3.3	POD_VS2	16
17	YX_I	3.3	YX_I	17
18	RSTA	0	RSTA	18
19	OOB_EN	0	OOB_EN	19
20	WAITA	3.3	WAITA	20
21	MA3	0	MA3	21
22	DSUB_DET	0	DSUB_DET	22
23	MA2	0	MA2	23
24	REG	3.3	REG	24
25	MA1	3.3	MA1	25
26	MOVALA	0	MOVALA	26
27	MA0	0	MA0	27
28	MOSTRTA	0	MOSTRTA	28
29	MDO	0	MDO	29
30	MDOA0	0	MDOA0	30
31	MD1	0	MD1	31
32	MDOA1	3.3	MDOA1	32
33	MD2	3.3	MD2	33
34	MDOA2	0	MDOA2	34
35	WE_ROM	0	WE_ROM	35
36	CD2A	3.3	CD2A	36
37	GND	0	GND	37
38	V+3.3V_UCOM	3.4	V+3.3V_UCOM	38
39	TEMP2_P	2.2	TEMP2_P	39
40	GND	0	GND	40

POD Assy — MTB MAIN Assy

CN9003(CKS3826-)		Voltage	CN4013(AKM1233- -TBB)	
No.	Name	(V)	Name	No.
12	PC_H	0	PC_H	12
11	PC_V	0	PC_V	11
10	GND	0	GND	10
9	PC_B	2.4*	PC_B	9
8	GND	0	GND	8
7	PC_G	2.4*	PC_G	7
6	GND	0	GND	6
5	PC_R	2.4*	PC_R	5
4	GND	0	GND	4
3	V+5V_A	5	V+5V_A	3
2	GND	0	GND	2
1	V+9V_A	9.2	V+9V_A	1

* When PC signal is not inputted.

AUDIO Assy — MTB MAIN Assy

CN3752(KM200NA11) No.	Name	Voltage (V)	CN4007(KM200NA11) Name	No.
11	PSW_A	2.8	PSW_A	11
10	SDA_AU	3.4	SDA_AU	10
9	SCL_AU	3.4	SCL_AU	9
8	A_MUTE	0	A_MUTE	8
7	A_STBY_B	3.3	A_STBY_B	7
6	GND	0	GND	6
5	AUDIO_R	0	AUDIO_R	5
4	GND	0	GND	4
3	AUDIO_L	0	AUDIO_L	3
2	GND	0	GND	2
1	A_NG_B	2.8	A_NG_B	1

LED IR Assy/KEY Assy — MTB MAIN Assy

CN9701 / CN9501 No.	Connector	Name	Voltage (V)	CN4010(KM200NA7) Name	No.
2	CN9701	REM	0	REM	7
6	CN9701	GND	0	GND	6
1	CN9701	V+5.1V_STB	5	V+5.1V_STB	5
4	CN9501	V+3.3V_STB	3.4	V+3.3V_STB	4
3	CN9501	KEY_AD1	3.4	KEY_AD1	3
2	CN9501	KEY_AD2	3.4	KEY_AD2	2
1	CN9501	GND	0	GND	1

50 LED Assy/LED IR Assy — MTB MAIN Assy

CN9601 / CN9701 No.	Connector	Name	Voltage (V)	CN4006(KM200NA6) Name	No.
1	CN9651	LED-	0.2	LED-	1
2	CN9651	LED_ON	3.4	LED_ON	2
3	CN9651	LED_OFF	0	LED_OFF	3
4	CN9701	LED_REC	0	LED_REC	4
5	CN9701	LED_MDM	0	LED_MDM	5
3	CN9701	LED-	0.2	LED-	6

POWER SUPPLY UNIT — MTB MAIN Assy

P8(B13B-PH-K-S) No.	Name	Voltage (V)	CN4002(KM200NA13) Name	No.
1	V+6.5V	6.9	V+6.5V	1
2	GND	0	GND	2
3	V+12V	12.2	V+12V	3
4	GND	0	GND	4
5	V+16.5V	17.3	V+16.5V	5
6	GND	0	GND	6
7	V+5_1V	5.1	V+5_1V	7
8	V+5_1V	5.1	V+5_1V	8
9	V+5_1V	5.1	V+5_1V	9
10	V+5_1V	5.1	V+5_1V	10
11	GND	0	GND	11
12	GND	0	GND	12
13	GND	0	GND	13

POWER SUPPLY UNIT — MTB MAIN Assy

P9(B11B-PH-K-S) No.	Name	Voltage (V)	CN4008(KM200NA11) Name	No.
1	M_SW_DET	3.2	M_SW_DET	1
2	AC_DET	2.9	AC_DET	2
3	N.C.	3.35	N.C.(RELAY)	3
4	GND-D	0	GND	4
5	STB3.3V	3.3	V+3.3V_STB	5
6	GND-D	0	GND	6
7	STBY5.1V	5.1	V+5.1V_STB	7
8	GND-D	0	GND	8
9	+35V	37.3	V+35V	9
10	GND-D	0	GND	10
11	US-SW	2.3	US-SW	11

FAN — MTB MAIN Assy

No.	Name	Voltage (V)	CN4009(AKM1274- -TBB) Name	No.
		7.7/11	FAN_VCC	1
		0	FAN_NG1	2
		0	GND	3

TRAP-SW — MTB MAIN Assy

No.	Name	Voltage (V)	CN4018(AKM1213- -TFB) Name	No.
		3.3	TRAP_SW	1
			NC	2
		3.3	V+3_3V_UCOM	3

USB — MTB MAIN Assy

No.	Name	Voltage (V)	CN7101(AKM1276- -TBB) Name	No.
		5.0	VBUS	1
		0	D-	2
		0	D+	3
		0	GND	4
		0	SHILD	5

■ 50 DIGITAL ASSY

CN3001 (D11) ↔ MAIN ASSY CN4001 (M1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	GND	–	GND	–	–
2	V+3.3V_UCOM2	I	Power supply for module microcomputer	3.3	–
3	INP_MUTE	O	Video signal input shut out control signal	0	–
4	THEATER	I	Control signal for pure cinema	0 to 3.3	–
5	VD	I	Vertical synchronized signal	0 to 3.3	–
6	HD	I	Horizontal synchronized signal	0 to 3.3	–
7	DE	I	Data enable signal	0 to 3.3	–
8	GND	–	GND	–	–
9	CLK	I	Data clock signal	0 to 3.3	–
10	GND	–	GND	–	–
11	GND	–	GND	–	–
12	VIDEO_R9	I	10 bit video signal input (RED)	0 to 3.3	–
13	VIDEO_R8	I	10 bit video signal input (RED)	0 to 3.3	–
14	VIDEO_R7	I	10 bit video signal input (RED)	0 to 3.3	–
15	VIDEO_R6	I	10 bit video signal input (RED)	0 to 3.3	–
16	VIDEO_R5	I	10 bit video signal input (RED)	0 to 3.3	–
17	VIDEO_R4	I	10 bit video signal input (RED)	0 to 3.3	–
18	VIDEO_R3	I	10 bit video signal input (RED)	0 to 3.3	–
19	VIDEO_R2	I	10 bit video signal input (RED)	0 to 3.3	–
20	VIDEO_R1	I	10 bit video signal input (RED)	0 to 3.3	–
21	VIDEO_R0	I	10 bit video signal input (RED)	0 to 3.3	–
22	GND	–	GND	–	–
23	VIDEO_G9	I	10 bit video signal input (GREEN)	0 to 3.3	–
24	VIDEO_G8	I	10 bit video signal input (GREEN)	0 to 3.3	–
25	VIDEO_G7	I	10 bit video signal input (GREEN)	0 to 3.3	–
26	VIDEO_G6	I	10 bit video signal input (GREEN)	0 to 3.3	–
27	VIDEO_G5	I	10 bit video signal input (GREEN)	0 to 3.3	–
28	VIDEO_G4	I	10 bit video signal input (GREEN)	0 to 3.3	–
29	VIDEO_G3	I	10 bit video signal input (GREEN)	0 to 3.3	–
30	VIDEO_G2	I	10 bit video signal input (GREEN)	0 to 3.3	–
31	VIDEO_G1	I	10 bit video signal input (GREEN)	0 to 3.3	–
32	VIDEO_G0	I	10 bit video signal input (GREEN)	0 to 3.3	–
33	GND	–	GND	–	–
34	VIDEO_B9	I	10 bit video signal input (BLUE)	0 to 3.3	–
35	VIDEO_B8	I	10 bit video signal input (BLUE)	0 to 3.3	–
36	VIDEO_B7	I	10 bit video signal input (BLUE)	0 to 3.3	–
37	VIDEO_B6	I	10 bit video signal input (BLUE)	0 to 3.3	–
38	VIDEO_B5	I	10 bit video signal input (BLUE)	0 to 3.3	–
39	VIDEO_B4	I	10 bit video signal input (BLUE)	0 to 3.3	–
40	VIDEO_B3	I	10 bit video signal input (BLUE)	0 to 3.3	–
41	VIDEO_B2	I	10 bit video signal input (BLUE)	0 to 3.3	–
42	VIDEO_B1	I	10 bit video signal input (BLUE)	0 to 3.3	–
43	VIDEO_B0	I	10 bit video signal input (BLUE)	0 to 3.3	–
44	GND	–	GND	–	–
45	RESERVE (N.C.)	–	Reserve	–	–
46	AC_OFF (N.C.)	O	AC state input	–	–
47	TXD_MD	O	UART communication	3.3	–
48	RXD_MD	I	UART communication	3.3	–
49	REQ_MD	O	Communication demand to main system	0	–
50	MODE	O	Model distinction	0	–

CN3002 (D12) ↔ Reserve (Non connection)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	V+3V_D	O	+3.3 V power supply output	3.3	–
2	V+3V_D	O	+3.3 V power supply output	3.3	–
3	V+3V_D	O	+3.3 V power supply output	3.3	–
4	GND_D	–	GND	–	–
5	GND_D	–	GND	–	–
6	GND_D	–	GND	–	–
7	LED_R	O	Red LED control output	0 to 3.3	–
8	LED_B	O	Blue LED control output	0 to 3.3	–
9	MSEL	I	Control select	0 to 3.3	–
10	PBF	I	Panel type judge	0 to 3.3	–
11	NC	I	Non connection	–	–
12	YOBI0	I	Reserve input	–	–
13	YOBI1	I	Reserve input	–	–
14	YOBI2	I	Reserve input	–	–
15	YOBI3	I	Reserve input	–	–
16	YOBI4	I	Reserve input	–	–
17	NC	I	Non connection	–	–
18	NC	I	Non connection	–	–
19	V+3V_STB	O	STB 3.3 V power supply output	3.3	–
20	GND_D	–	GND	–	–

CN3151 (D24) ↔ SENSOR ASSY CN3651 (TE1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	V+3.3V_EEP	O	Power supply output for memory	3.3	–
2	E_SCL	O	IIC communication clock signal	0 to 3.3	–
3	E_SDA	O	IIC communication data signal	0 to 3.3	–
4	TEMP1	I	Panel temperature sensor signal	0 to 3.3	–
5	GND	–	GND	–	–

CN3601 (D21) ↔ POWER SUPPLY UNIT (P4)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	V+12V	I	+12 V power supply input	12	–
2	V+12V	I	+12 V power supply input	12	–
3	GND	–	GND	–	–
4	GND	–	GND	–	–
5	V+3.3V_STB	I	STB3.3 V power supply input	0 to 3.3	–
6	GND	–	GND	–	–
7	M_SW_DET	I	Mechanism switch detection signal input	0 to 3.3	–
8	EXT_PD	O	Power down signal	0 to 3.3	–
9	VSUS_ADJ	O	VSUS power supply adjustment signal	0 to 3.3	–
10	PS_PD	I	Power supply PD signal	0 to 3.3	–
11	RELAY	O	Relay control	0 to 3.3	–
12	DRF_B	O	Large power supply ON/OFF control signal	0 to 3.3	–
13	AC_DET	I	AC power supply state input	0 to 3.3	–
14	PD_TRG_B	I	Power down trigger signal	0 to 3.3	–

CN3501 (D15) ↔ 50 ADDRESS L ASSY CN1602 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	NC	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 3.3	–
3	PSIZE	I	Panel size judge signal	0	–
4	GND	–	GND	–	–
5	V+8V	O	+8 V power supply input	8	–
6	V+8V	O	+8 V power supply input	8	–
7	GND	–	GND	–	–
8	GND_LVDS	–	GND	–	–
9	NC	–	Non connection	–	–
10	TAN	O	LVDS data	1 to 1.4	–
11	TAP	O	LVDS data	1 to 1.4	–
12	NC	–	Non connection	–	–
13	GND_LVDS	–	GND	–	–
14	NC	–	Non connection	–	–
15	TBN	O	LVDS data	1 to 1.4	–
16	TBP	O	LVDS data	1 to 1.4	–
17	NC	–	Non connection	–	–
18	GND_LVDS	–	GND	–	–
19	NC	–	Non connection	–	–
20	TCN	O	LVDS data	1 to 1.4	–
21	TCP	O	LVDS data	1 to 1.4	–
22	NC	–	Non connection	–	–
23	GND_LVDS	–	GND	–	–
24	NC	–	Non connection	–	–
25	TCLKN	O	LVDS data	1 to 1.4	–
26	TCLKP	O	LVDS data	1 to 1.4	–
27	NC	–	Non connection	–	–
28	GND_LVDS	–	GND	–	–
29	NC	–	Non connection	–	–
30	TDN	O	LVDS data	1 to 1.4	–
31	TDP	O	LVDS data	1 to 1.4	–
32	NC	–	Non connection	–	–
33	GND_LVDS	–	GND	–	–
34	GND	–	GND	–	–
35	V+3.3V	O	+3.3 V power supply output	3.3	–
36	V+3.3V	O	+3.3 V power supply output	3.3	–
37	GND	–	GND	–	–
38	DIV1	O	Data output timing control	3.3	–
39	DIV0	O	Data output timing control	3.3	–
40	GND	–	GND	–	–

CN3502 (D16) ↔ 50 ADDRESS S ASSY CN1802 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	NC	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 3.3	–
3	PSIZE	I	Panel size judge signal	0	–
4	GND	–	GND	–	–
5	V+8V	O	+8 V power supply input	8	–
6	V+8V	O	+8 V power supply input	8	–
7	GND	–	GND	–	–
8	GND_LVDS	–	GND	–	–
9	NC	–	Non connection	–	–
10	TAN	O	LVDS data	1 to 1.4	–
11	TAP	O	LVDS data	1 to 1.4	–
12	NC	–	Non connection	–	–
13	GND_LVDS	–	GND	–	–
14	NC	–	Non connection	–	–
15	TBN	O	LVDS data	1 to 1.4	–
16	TBP	O	LVDS data	1 to 1.4	–
17	NC	–	Non connection	–	–
18	GND_LVDS	–	GND	–	–
19	NC	–	Non connection	–	–
20	TCN	O	LVDS data	1 to 1.4	–
21	TCP	O	LVDS data	1 to 1.4	–
22	NC	–	Non connection	–	–
23	GND_LVDS	–	GND	–	–
24	NC	–	Non connection	–	–
25	TCLKN	O	LVDS data	1 to 1.4	–
26	TCLKP	O	LVDS data	1 to 1.4	–
27	NC	–	Non connection	–	–
28	GND_LVDS	–	GND	–	–
29	NC	–	Non connection	–	–
30	TDN	O	LVDS data	1 to 1.4	–
31	TDP	O	LVDS data	1 to 1.4	–
32	NC	–	Non connection	–	–
33	GND_LVDS	–	GND	–	–
34	GND	–	GND	–	–
35	V+3.3V	O	+3.3 V power supply output	3.3	–
36	V+3.3V	O	+3.3 V power supply output	3.3	–
37	GND	–	GND	–	–
38	DIV1	O	Data output timing control	0	–
39	DIV0	O	Data output timing control	0	–
40	GND	–	GND	–	–

CN3503 (D17) ↔ 50 ADDRESS S ASSY CN1802 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	NC	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 3.3	–
3	PSIZE	I	Panel size judge signal	0	–
4	GND	–	GND	–	–
5	V+8V	O	+8 V power supply input	8	–
6	V+8V	O	+8 V power supply input	8	–
7	GND	–	GND	–	–
8	GND_LVDS	–	GND	–	–
9	NC	–	Non connection	–	–
10	TAN	O	LVDS data	1 to 1.4	–
11	TAP	O	LVDS data	1 to 1.4	–
12	NC	–	Non connection	–	–
13	GND_LVDS	–	GND	–	–
14	NC	–	Non connection	–	–
15	TBN	O	LVDS data	1 to 1.4	–
16	TBP	O	LVDS data	1 to 1.4	–
17	NC	–	Non connection	–	–
18	GND_LVDS	–	GND	–	–
19	NC	–	Non connection	–	–
20	TCN	O	LVDS data	1 to 1.4	–
21	TCP	O	LVDS data	1 to 1.4	–
22	NC	–	Non connection	–	–
23	GND_LVDS	–	GND	–	–
24	NC	–	Non connection	–	–
25	TCLKN	O	LVDS data	1 to 1.4	–
26	TCLKP	O	LVDS data	1 to 1.4	–
27	NC	–	Non connection	–	–
28	GND_LVDS	–	GND	–	–
29	NC	–	Non connection	–	–
30	TDN	O	LVDS data	1 to 1.4	–
31	TDP	O	LVDS data	1 to 1.4	–
32	NC	–	Non connection	–	–
33	GND_LVDS	–	GND	–	–
34	GND	–	GND	–	–
35	V+3.3V	O	+3.3 V power supply output	3.3	–
36	V+3.3V	O	+3.3 V power supply output	3.3	–
37	GND	–	GND	–	–
38	DIV1	O	Data output timing control	3.3	–
39	DIV0	O	Data output timing control	0	–
40	GND	–	GND	–	–

CN3504 (D18) ↔ 50 ADDRESS L ASSY CN1602 (AD1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	NC	–	Non connection	–	–
2	ADR_PD	I	Address PD signal	0 to 3.3	–
3	PSIZE	I	Panel size judge signal	0	–
4	GND	–	GND	–	–
5	V+8V	O	+8 V power supply input	8	–
6	V+8V	O	+8 V power supply input	8	–
7	GND	–	GND	–	–
8	GND_LVDS	–	GND	–	–
9	NC	–	Non connection	–	–
10	TAN	O	LVDS data	1 to 1.4	–
11	TAP	O	LVDS data	1 to 1.4	–
12	NC	–	Non connection	–	–
13	GND_LVDS	–	GND	–	–
14	NC	–	Non connection	–	–
15	TBN	O	LVDS data	1 to 1.4	–
16	TBP	O	LVDS data	1 to 1.4	–
17	NC	–	Non connection	–	–
18	GND_LVDS	–	GND	–	–
19	NC	–	Non connection	–	–
20	TCN	O	LVDS data	1 to 1.4	–
21	TCP	O	LVDS data	1 to 1.4	–
22	NC	–	Non connection	–	–
23	GND_LVDS	–	GND	–	–
24	NC	–	Non connection	–	–
25	TCLKN	O	LVDS data	1 to 1.4	–
26	TCLKP	O	LVDS data	1 to 1.4	–
27	NC	–	Non connection	–	–
28	GND_LVDS	–	GND	–	–
29	NC	–	Non connection	–	–
30	TDN	O	LVDS data	1 to 1.4	–
31	TDP	O	LVDS data	1 to 1.4	–
32	NC	–	Non connection	–	–
33	GND_LVDS	–	GND	–	–
34	GND	–	GND	–	–
35	V+3.3V	O	+3.3 V power supply output	3.3	–
36	V+3.3V	O	+3.3 V power supply output	3.3	–
37	GND	–	GND	–	–
38	DIV1	O	Data output timing control	0	–
39	DIV0	O	Data output timing control	3.3	–
40	GND	–	GND	–	–

CN3506 (D20) ↔ 50 Y MAIN DRIVE ASSY CN2001 (Y1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
40	PSW2	O	Function standby control signal	0 to 3.3	–
39	YDRV_PD	I	Y drive PD signal	0 to 3.3	–
38	SCAN_PD	I	Y drive PD signal	0 to 3.3	–
37	YSUS_PD	I	Y drive PD signal	0 to 3.3	–
36	YDD_PD	I	Y drive PD signal	0 to 3.3	–
35	GND	–	GND	–	–
34	GND	–	GND	–	–
33	GND	–	GND	–	–
32	GND	–	GND	–	–
31	VYPRST_ADJ	O	Y drive control signal	0 to 3.3	–
30	VOFS_ADJ	O	Y drive control signal	0 to 3.3	–
29	GND	–	GND	–	–
28	YSOFT-D	O	Y drive control signal	0 to 3.3	–
27	YRsv3	O	Y drive control signal	0 to 3.3	–
26	YNOFS	O	Y drive control signal	0 to 3.3	–
25	GND	–	GND	–	–
24	YRsv2	O	Y drive control signal	0 to 3.3	–
23	YNRST	O	Y drive control signal	0 to 3.3	–
22	YSUS_MSK	O	Y drive control signal	0 to 3.3	–
21	GND	–	GND	–	–
20	SUS_MUTE	O	Y drive control signal	0 to 3.3	–
19	YPR-U	O	Y drive control signal	0 to 3.3	–
18	GND	–	GND	–	–
17	YSUS_G	O	Y drive control signal	0 to 3.3	–
16	YSUS_D	O	Y drive control signal	0 to 3.3	–
15	GND	–	GND	–	–
14	YSUS_U	O	Y drive control signal	0 to 3.3	–
13	YSUS_B	O	Y drive control signal	0 to 3.3	–
12	GND	–	GND	–	–
11	OC1 (–1)	O	Scan control signal	0 to 3.3	–
10	OC2	O	Scan control signal	0 to 3.3	–
9	LE	O	Scan control signal	0 to 3.3	–
8	GND	–	GND	–	–
7	CLK1	O	Scan control signal	0 to 3.3	–
6	CLR	O	Scan control signal	0 to 3.3	–
5	GND	–	GND	–	–
4	SI_H	O	Scan control signal	0 to 3.3	–
3	SI_L	O	Scan control signal	0 to 3.3	–
2	SCN5V_PD	I	Scan 5 V PD signal	0 to 3.3	–
1	YCN_PD	O	Y drive PD signal	0 to 3.3	–

CN3505 (D19) ↔ 50 X MAIN DRIVE ASSY CN1001 (X1)

Pin No.	Pin Name	I/O	Function	Voltage (V)	TP
1	PSW2	O	Function standby control signal	0 to 3.3	–
2	XSUS_PD	I	X drive PD signal	0 to 3.3	–
3	XDD_PD	I	X drive PD signal	0 to 3.3	–
4	XDRV_PD	I	X drive PD signal	0 to 3.3	–
5	GND	–	GND	–	–
6	SUS_MUTE	O	X drive control signal	0 to 3.3	–
7	XSUS_MSK	O	X drive control signal	0 to 3.3	–
8	GND	–	GND	–	–
9	XNR_D	O	X drive control signal	0 to 3.3	–
10	GND	–	GND	–	–
11	XSUS_G	O	X drive control signal	0 to 3.3	–
12	GND	–	GND	–	–
13	XSUS_D	O	X drive control signal	0 to 3.3	–
14	GND	–	GND	–	–
15	XSUS_U	O	X drive control signal	0 to 3.3	–
16	GND	–	GND	–	–
17	XSUS_B	O	X drive control signal	0 to 3.3	–
18	XCN_PD	O	X drive PD signal	0 to 3.3	–

■ Pin Function

AUDIO ASSY CN3752 (A2) ↔ MAIN ASSY CN4007 (M9)

Pin No.	Pin Name	I/O	Function	Remarks
1	A_NG_B	O	DC detection, disconnection of cable detection	L : Abnormal, H : Normal
2	GND	–	GND for small signal	–
3	AUDIO_L	I	Small signal L ch	–
4	GND	–	GND for small signal	–
5	AUDIO_R	I	Small signal R ch	–
6	GND	–	GND for small signal	–
7	A_STBY_B	I	MUTE ON/OFF signal for LA4625 IC internal circuit	L : Standby, H : ON
8	A_MUTE	I	MUTE ON/OFF signal for LA4625 IC external circuit	L : MUTE OFF, H : MUTE
9	SCL_AU	I	CLK of I2C for NJW1183GK1 IC	–
10	SDA_AU	I/O	DATA of I2C for NJW1183GK1 IC	–
11	PSW_A	I	ON/OFF switch for 12 V regulator IC	L : OFF, H : ON

AUDIO ASSY CN3751 (A1) ↔ POWER SUPPLY UNIT (P5)

Pin No.	Pin Name	I/O	Function	Remarks
1	+16.5V	–	Power supply (16.5 V) for LA4625 IC	–
2	GND_D	–	Return GND for LA4625 IC	–
3	GND_D	–	Return GND for LA4625 IC	–

AUDIO ASSY CN3753 (A3) ↔ SP TERMINAL ASSY CN3901 (SP1)

Pin No.	Pin Name	I/O	Function	Remarks
1	RH+	O	Toweeter output R+	–
2	RL+	O	Woofer output R+ (Speaker output R+)	–
3	RH–	O	Toweeter output R–	–
4	RL–	O	Woofer output R– (Speaker output R–)	–
5	LL+	O	Woofer output L+ (Speaker output L+)	–
6	LH+	O	Toweeter output L+	–
7	LL–	O	Woofer output L– (Speaker output L–)	–
8	LH–	O	Toweeter output L–	–

SIDE KEY ASSY CN9501 (SW1) ↔ MAIN ASSY CN4010 (M8)

Pin No.	Pin Name	I/O	Function	Remarks
1	GND	–	GND	–
2	KEY_AD2	O	KEY voltage 2	–
3	KEY_AD1	O	KEY voltage 1	–
4	V+3.3V_STB	–	Standby 3.3 V power supply	–

50 LED ASSY CN9651 (L1) ↔ MAIN ASSY CN4006 (M5)

Pin No.	Pin Name	I/O	Function	Remarks
1	LED–	–	LED signal return	–
2	LED_ON	I	LED control for power ON	H : LED_ON, L : LED_OFF
3	LED_OFF	I	LED control for standby	H : LED_ON, L : LED_OFF

LED IR ASSY CN9701 (RE1) ↔ MAIN ASSY CN4010 (M8)

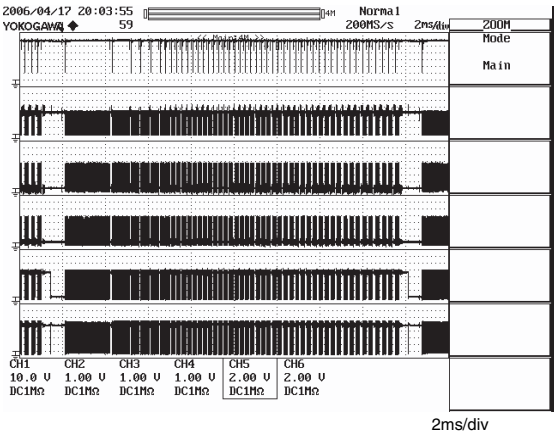
Pin No.	Pin Name	I/O	Function	Remarks
1	V+5.1V_STB	–	Standby 5.1 V power supply	–
2	REM	O	Remote control signal	–
3	LED–	–	LED signal return	–
4	LED_REC	I	LED control for REC	H : LED_ON, L : LED_OFF
5	LED_MDM	I	–	–
6	GND	–	GND	–

4.17 WAVEFORMS

50 ADDRESS L Assy Waveform

	Measuring CH	Waveform	Measuring Point	Waveform	Measuring Point	
①	CH1	Resonance waveform (V+ADR)	L1730	Resonance waveform (V+ADR)	L1730	
②	CH2	R ch signal	R1608	R ch signal	R1608	
③	CH3	CLK	R1637	CLK	R1637	
④	CH4	LE	R1621	LE	R1621	
⑤	CH5	ADR-D	R1720	HBLK	R1615	⑧
⑥	CH6	ADR-B	R1714	–	–	
	CH7	–	–	LBLK	R1616	⑦

Color-Bar (MKSS17)



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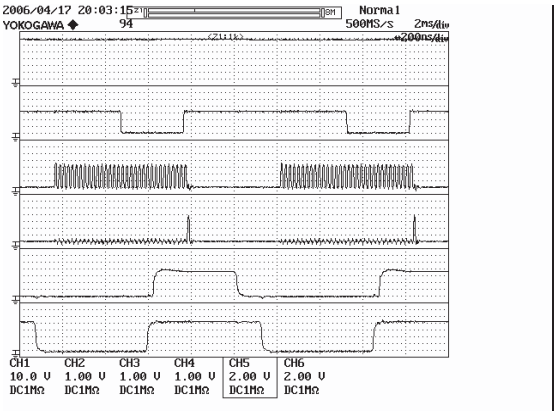
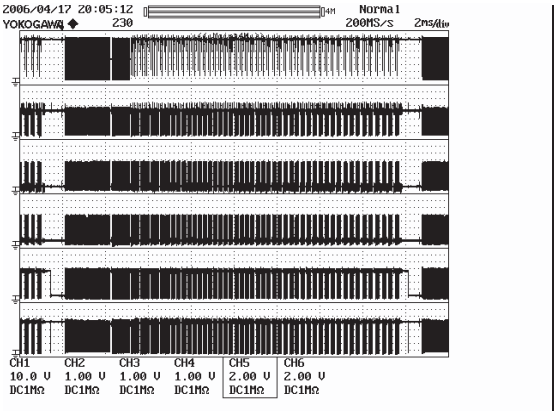


200ns/div

B/W Checkered pattern (MKSS14)



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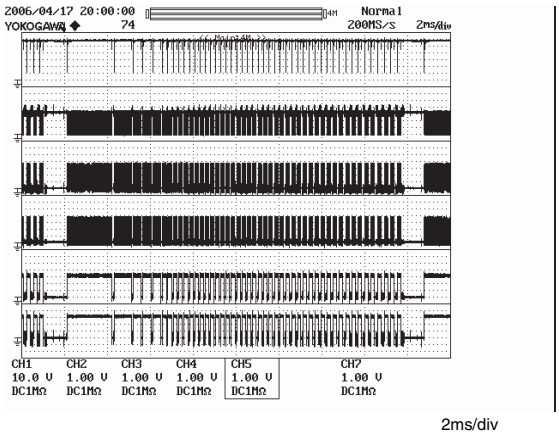
Color-Bar (MKSS17)



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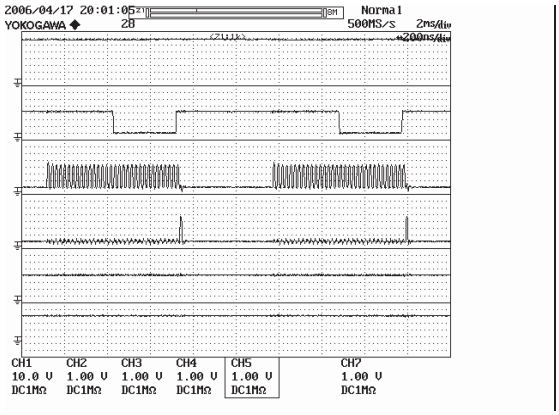
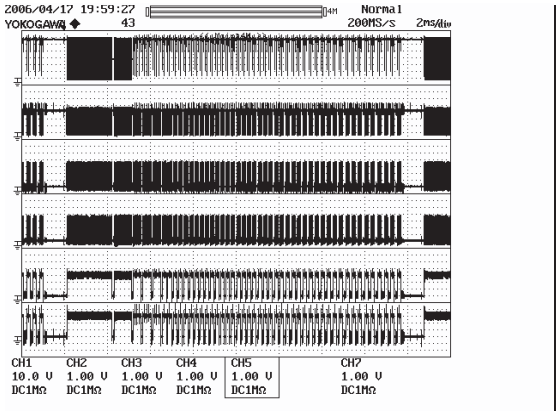
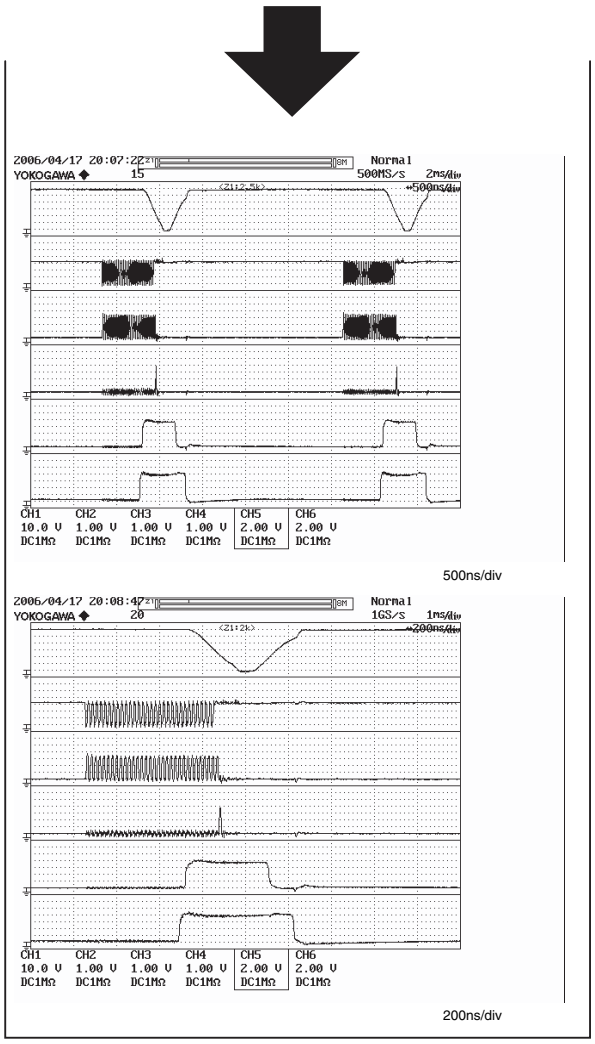


200ns/div

B/W Checkered pattern (MKSS14)



2ms/div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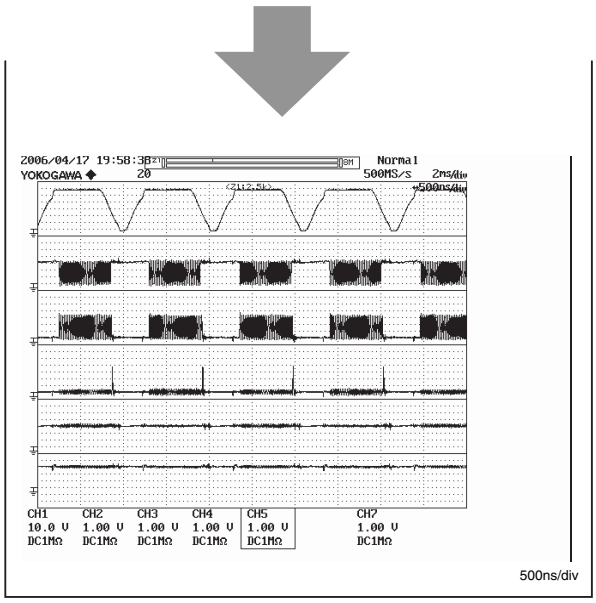
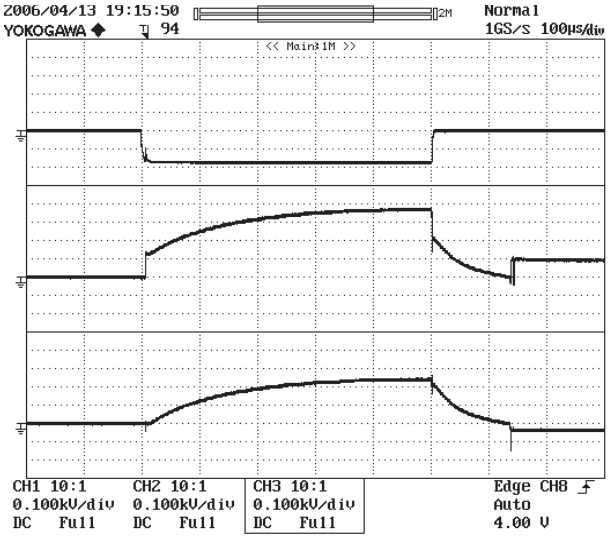
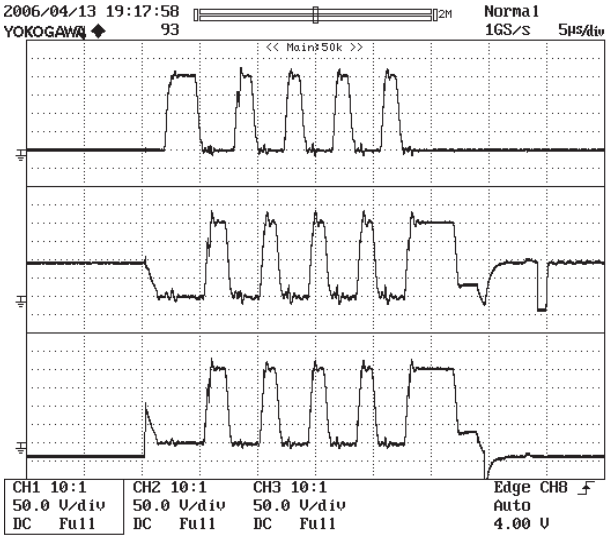
YOKOGAWA
15
Normal
500MS/s
2ms/div
500ns/div
CH1 CH2 CH3 CH4 CH5 CH6
10.0 V 1.00 V 1.00 V 1.00 V 2.00 V 2.00 V
DC1MΩ DC1MΩ DC1MΩ DC1MΩ DC1MΩ DC1MΩ
500ns/div
2006/04/17 20:08:47
YOKOGAWA
20
Normal
1GS/s
1ms/div
200ns/div
CH1 CH2 CH3 CH4 CH5 CH6
10.0 V 1.00 V 1.00 V 1.00 V 2.00 V 2.00 V
DC1MΩ DC1MΩ DC1MΩ DC1MΩ DC1MΩ DC1MΩ
200ns/div


2006/04/17 19:58:38
YOKOGAWA
20
Normal
500MS/s
2ms/div
500ns/div
CH1 CH2 CH3 CH4 CH5 CH7
10.0 V 1.00 V 1.00 V 1.00 V 1.00 V 1.00 V
DC1MΩ DC1MΩ DC1MΩ DC1MΩ DC1MΩ DC1MΩ
500ns/div

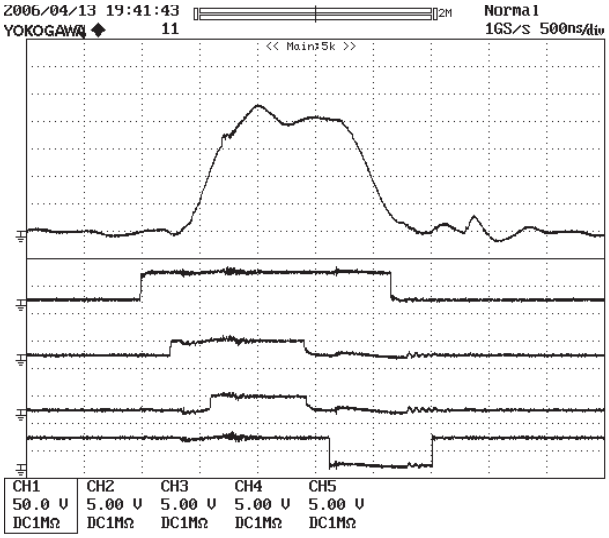
50 X/Y DRIVE Assy Waveform



⑨	CH1	R1248 (XPSUS) V:100 V/div	-K1202(SUSGND) H:100 uS/div (X drive Assy)
⑩	CH2	K2901 (ScanOUT) V:100 V/div	-K2701(SUSGND) H:100 uS/div (Y drive Assy)
⑪	CH3	F2207 (YPSUS) V:100 V/div	-K2203(SUSGND) H:100 uS/div (Y drive Assy)

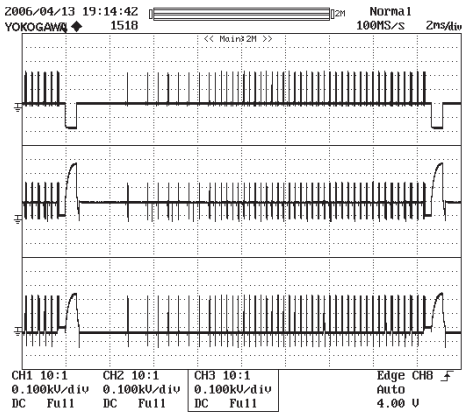


⑫	CH1	R1248 (XPSUS) V:50 V/div	-K1202(SUSGND) H:5 uS/div (X drive Assy)
⑬	CH2	K2901 (ScanOUT) V:50 V/div	-K2701(SUSGND) H:5 uS/div (Y drive Assy)
⑭	CH3	F2207 (YPSUS) V:50 V/div	-K2203(SUSGND) H:5 uS/div (Y drive Assy)



⑮	CH1	F2207 (YPSUS) V:100 V/div	-K2203(SUSGND) H:500 nS/div (Y drive Assy)
⑯	CH2	K2021 (YSUS_G) V:5 V/div	-K2014(GND) H:500 nS/div (Y drive Assy)
⑰	CH3	K2009 (YSUS_U) V:5 V/div	-K2014(GND) H:500 nS/div (Y drive Assy)
⑱	CH4	K2013 (YSUS_B) V:5 V/div	-K2014(GND) H:500 nS/div (Y drive Assy)
⑲	CH5	K2010 (YSUS_D) V:5 V/div	-K2014(GND) H:500 nS/div (Y drive Assy)

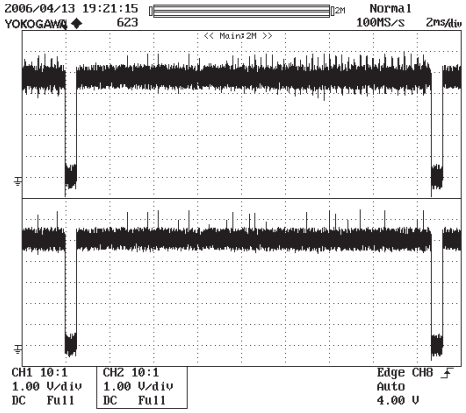
50 X/Y DRIVE Assy Waveform



⑳ CH1 R1248 (XPSUS) -K1202(SUSGND)
V:100V/div H:2mS/div
(X drive Assy)

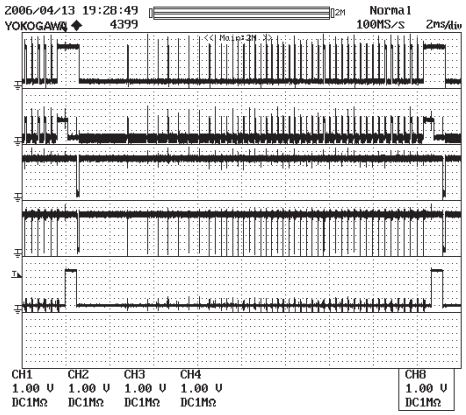
㉑ CH2 K2901 (ScanOUT) -K2701(SUSGND)
V:100V/div H:2mS/div
(Y drive Assy)

㉒ CH3 F2207 (YPSUS) -K2203(SUSGND)
V:100V/div H:2mS/div
(Y drive Assy)



㉓ CH1 K1013 (XSUS_MSK)-K1004(GND)
V:1V/div H:2mS/div
(X drive Assy)

㉔ CH2 K1007 (XNR-D) -K1004(GND)
V:1V/div H:2mS/div
(X drive Assy)



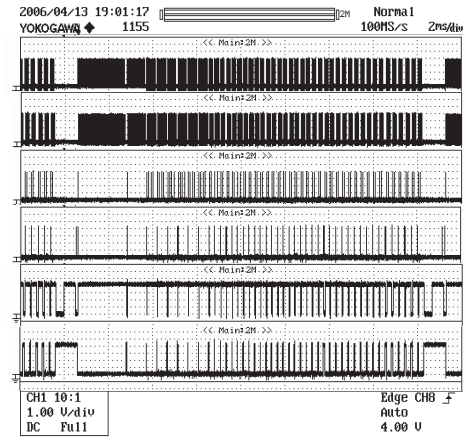
㉕ CH1 K2007 (YNOFS) -K2014(GND)
V:1V/div H:2mS/div
(Y drive Assy)

㉖ CH2 K2007 (YSUS_MSK)-K2014(GND)
V:1V/div H:2mS/div
(Y drive Assy)

㉗ CH3 K2008 (YNRST) -K2014(GND)
V:1V/div H:2mS/div
(Y drive Assy)

㉘ CH4 K2006 (SOFT-D) -K2014(GND)
V:1V/div H:2mS/div
(Y drive Assy)

㉙ CH5 K2011 (YPR-U) -K2014(GND)
V:1V/div H:2mS/div
(Y drive Assy)



㉚ CH1 IC2001 18(LE) -K2014GND)
V:1V/div H:2mS/div
(Y drive Assy)

㉛ CH2 IC2001 17 (CLK) -K2014(GND)
V:1V/div H:2mS/div
(Y drive Assy)

㉜ CH3 IC2001 16 (SI_H) -K2014(GND)
V:1V/div H:2mS/div
(Y drive Assy)

㉝ CH4 IC2001 15 (CLR) -K2014(GND)
V:1V/div H:2mS/div
(Y drive Assy)

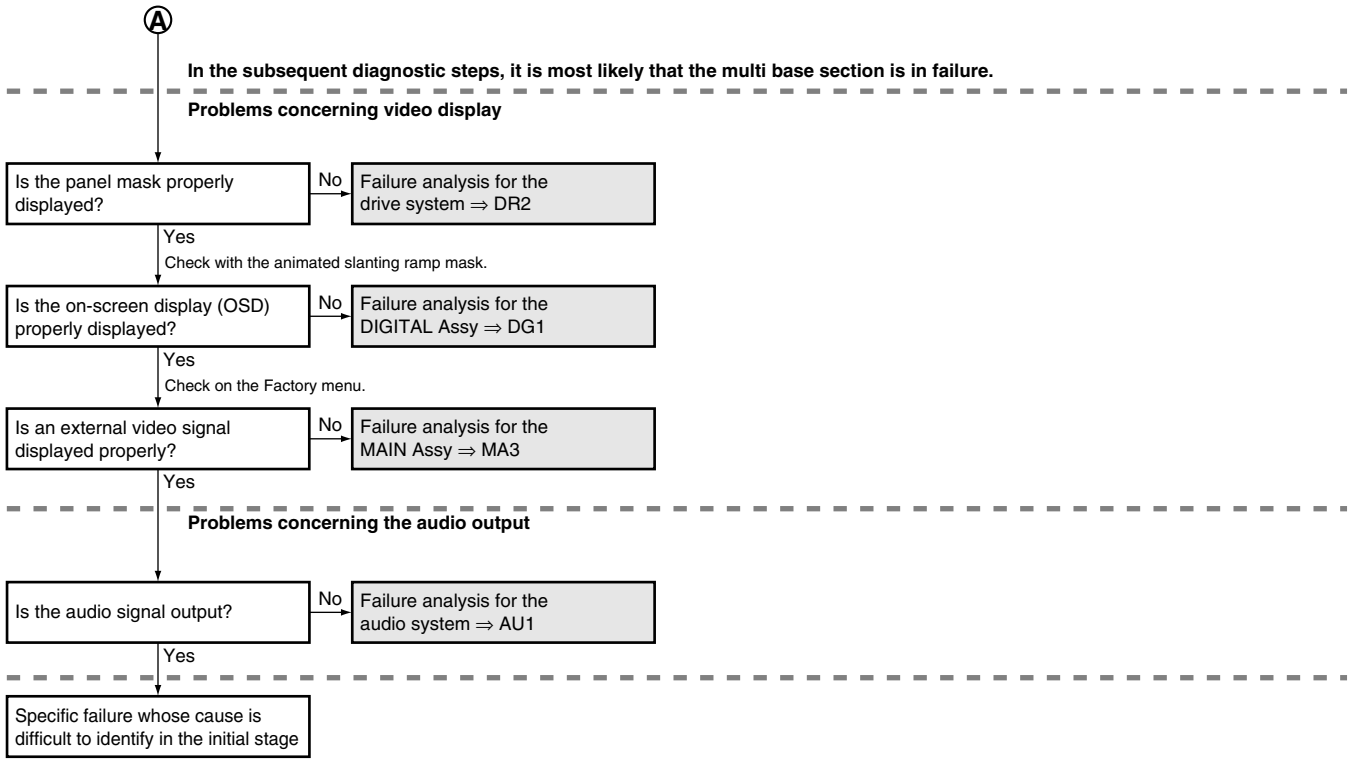
㉞ CH5 IC2001 14 (OC2) -K2014(GND)
V:1V/div H:2mS/div
(Y drive Assy)

㉟ CH5 IC2001 13 (OC1) -K2014(GND)
V:1V/div H:2mS/div
(Y drive Assy)

5. DIAGNOSIS INFORMATION
5.1 THE FLOW OF DIAGNOSIS
5.1.1 FLOWCHART OF FAILURE ANALYSIS FOR THE WHOLE UNIT

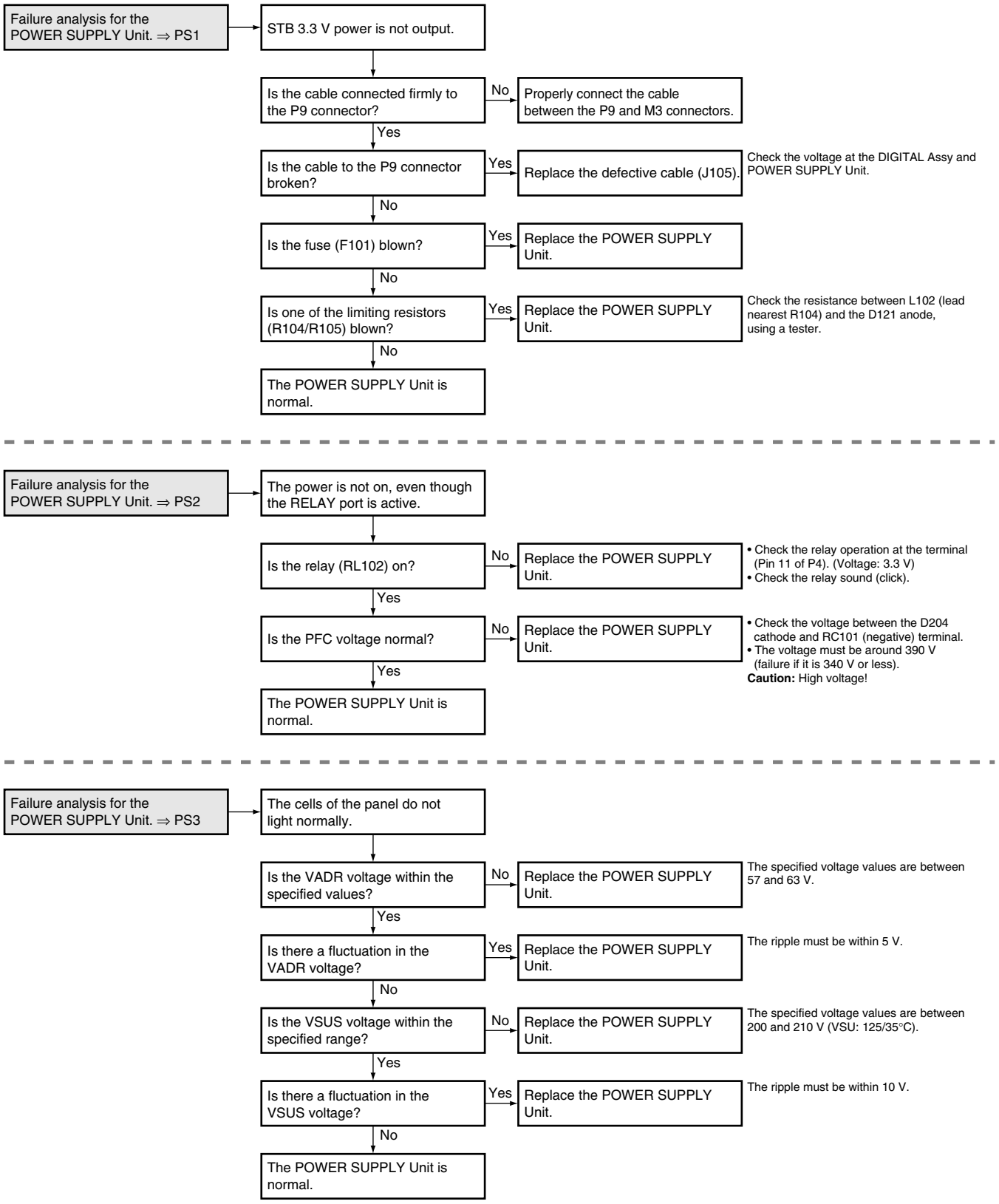
Flowchart of Failure Analysis for The Whole Unit

START
Problems concerning STB status
Is the STB LED lit?
No
Is STB 3.3 V power supplied? (Check the power at the IF micro-computer on the MAIN Assy.)
No
Check if the cable that connects the POWER SUPPLY and MAIN Assys is firmly connected.
NG
Failure analysis for the POWER SUPPLY Unit. ⇒ PS1
Yes
Yes
The blue LED on the DIGITAL Assy indicates ON/STB of the panel and causes for a power-down or shutdown. If neither the blue nor red LED lights, it is likely that the power to the STB system is not supplied. (failure, PASV-STB status)
Is the voltage at AC_DET on the POWER SUPPLY Unit high?
No
Replace the POWER SUPPLY Unit.
Yes
Failure analysis for the MAIN Assy. ⇒ MA1
Problems concerning the power
Can the unit be turned on (Relay ON)?
No
Is the power shutdown?
No
Is the voltage at the RELAY port of the connectors between the DIGITAL and POWER SUPPLY Assys H (3.3 V)?
No
Failure analysis for the MAIN Assy. ⇒ MA2
If the module microcomputer does not receive the PON command, it is likely that the main microcomputer did not issue the command.
Yes
Yes
Yes
Failure analysis for the POWER SUPPLY Unit. ⇒ PS2
A shutdown occurs.
Yes
See "Shutdown diagnosis." ⇒ SD
No
A power-down occurs.
Yes
See "Power-down diagnosis." ⇒ PD
A power-down will not be generated if the drive is off.
No
Problems concerning lighting of the panel
Does the screen display reset lighting?
No
Is the drive off?
Yes
Turn the drive on.
• Check the DRF SW.
• Before turning the drive off with the RS-232C commands or using the remote control unit, turn the unit off.
Yes
No
Failure analysis for the drive system ⇒ DR1
Is the panel arbitrary turned on or off repeatedly? Or do luminescent spots appear on the screen?
Yes
Failure analysis for the POWER SUPPLY Unit. ⇒ PS3
In a case where luminescent spots appear or the panel is repeatedly turned on or off
Yes
Failure analysis for the drive system ⇒ DR2
In a case where luminescent spots appear
No
Is there any local abnormality on the screen?
Yes
Is the abnormality associated with one address or one TCP?
No
Is the abnormality associated with a single scan line?
No
Replace the panel chassis.
Yes
Yes
No
Failure analysis for the drive system ⇒ DR3
Failure analysis for the drive system ⇒ DR4
Ⓐ


A
In the subsequent diagnostic steps, it is most likely that the multi base section is in failure.
Problems concerning video display
Is the panel mask properly displayed?
No
Failure analysis for the drive system ⇒ DR2
Yes
Check with the animated slanting ramp mask.
Is the on-screen display (OSD) properly displayed?
No
Failure analysis for the DIGITAL Assy ⇒ DG1
Yes
Check on the Factory menu.
Is an external video signal displayed properly?
No
Failure analysis for the MAIN Assy ⇒ MA3
Yes
Problems concerning the audio output
Is the audio signal output?
No
Failure analysis for the audio system ⇒ AU1
Yes
Specific failure whose cause is difficult to identify in the initial stage

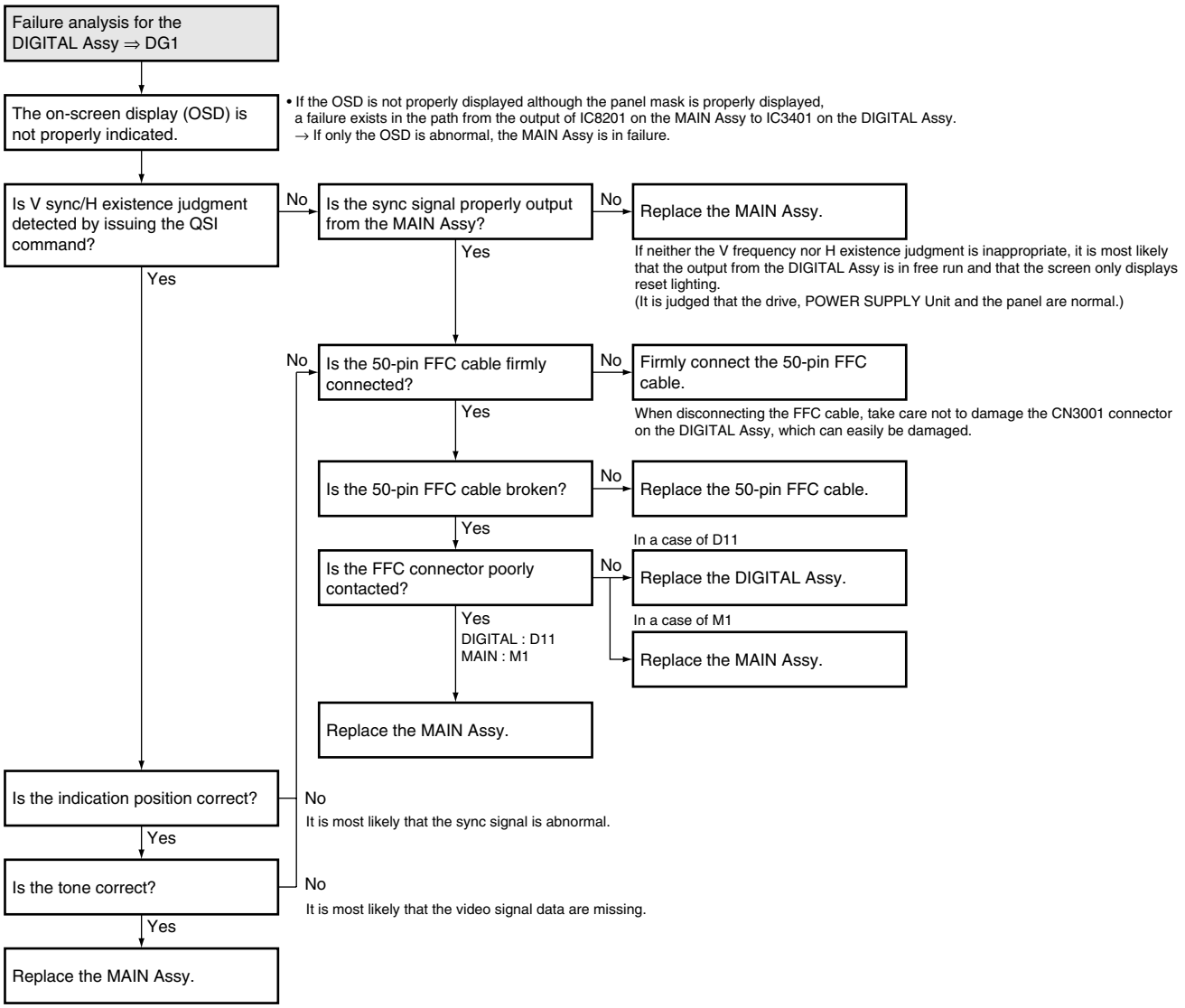
5.1.2 FLOWCHART OF FAILURE ANALYSIS FOR THE POWER SUPPLY UNIT

Flowchart of Failure Analysis for The POWER SUPPLY Unit


Failure analysis for the POWER SUPPLY Unit. ⇒ PS1
STB 3.3 V power is not output.
Is the cable connected firmly to the P9 connector?
No
Properly connect the cable between the P9 and M3 connectors.
Yes
Is the cable to the P9 connector broken?
Yes
Replace the defective cable (J105).
Check the voltage at the DIGITAL Assy and POWER SUPPLY Unit.
No
Is the fuse (F101) blown?
Yes
Replace the POWER SUPPLY Unit.
No
Is one of the limiting resistors (R104/R105) blown?
Yes
Replace the POWER SUPPLY Unit.
Check the resistance between L102 (lead nearest R104) and the D121 anode, using a tester.
No
The POWER SUPPLY Unit is normal.
Failure analysis for the POWER SUPPLY Unit. ⇒ PS2
The power is not on, even though the RELAY port is active.
Is the relay (RL102) on?
No
Replace the POWER SUPPLY Unit.
• Check the relay operation at the terminal (Pin 11 of P4). (Voltage: 3.3 V)
• Check the relay sound (click).
Yes
Is the PFC voltage normal?
No
Replace the POWER SUPPLY Unit.
• Check the voltage between the D204 cathode and RC101 (negative) terminal.
• The voltage must be around 390 V (failure if it is 340 V or less).
Caution: High voltage!
Yes
The POWER SUPPLY Unit is normal.
Failure analysis for the POWER SUPPLY Unit. ⇒ PS3
The cells of the panel do not light normally.
Is the VADR voltage within the specified values?
No
Replace the POWER SUPPLY Unit.
The specified voltage values are between 57 and 63 V.
Yes
Is there a fluctuation in the VADR voltage?
Yes
Replace the POWER SUPPLY Unit.
The ripple must be within 5 V.
No
Is the VSUS voltage within the specified range?
No
Replace the POWER SUPPLY Unit.
The specified voltage values are between 200 and 210 V (VSU: 125/35°C).
Yes
Is there a fluctuation in the VSUS voltage?
Yes
Replace the POWER SUPPLY Unit.
The ripple must be within 10 V.
No
The POWER SUPPLY Unit is normal.

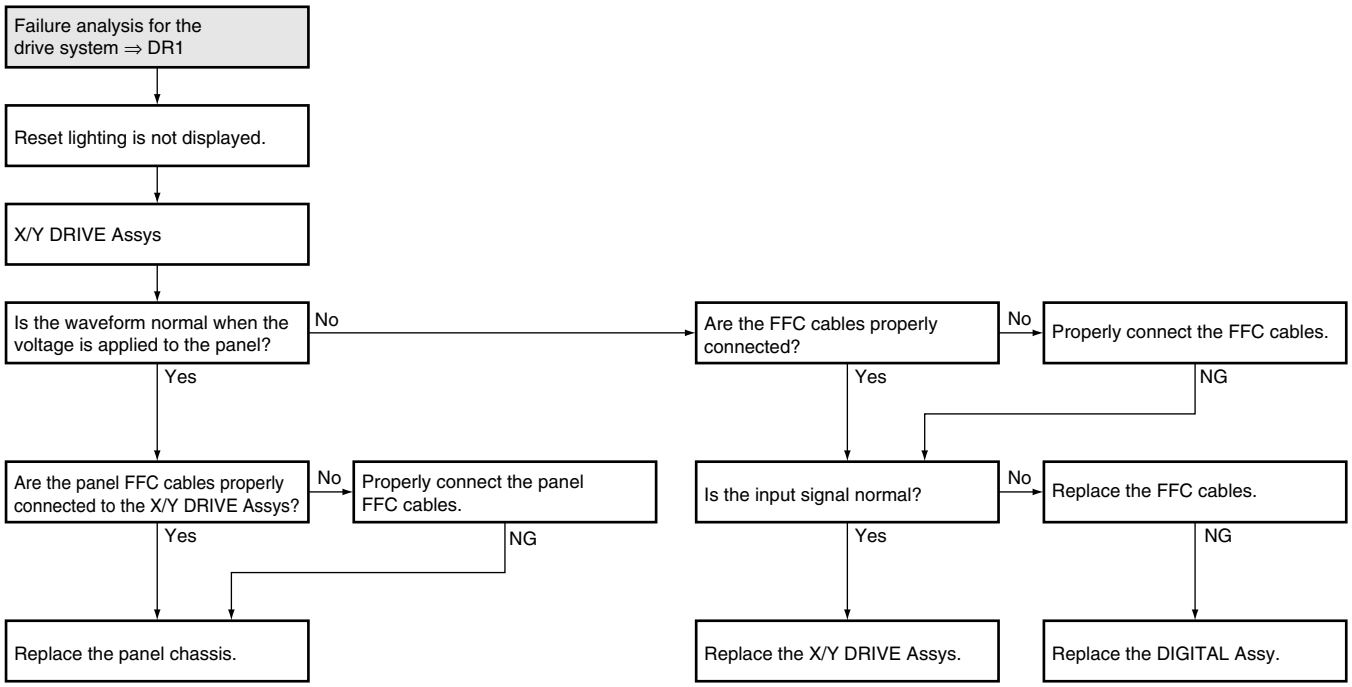
5.1.3 FLOWCHART OF FAILURE ANALYSIS FOR THE DIGITAL ASSY

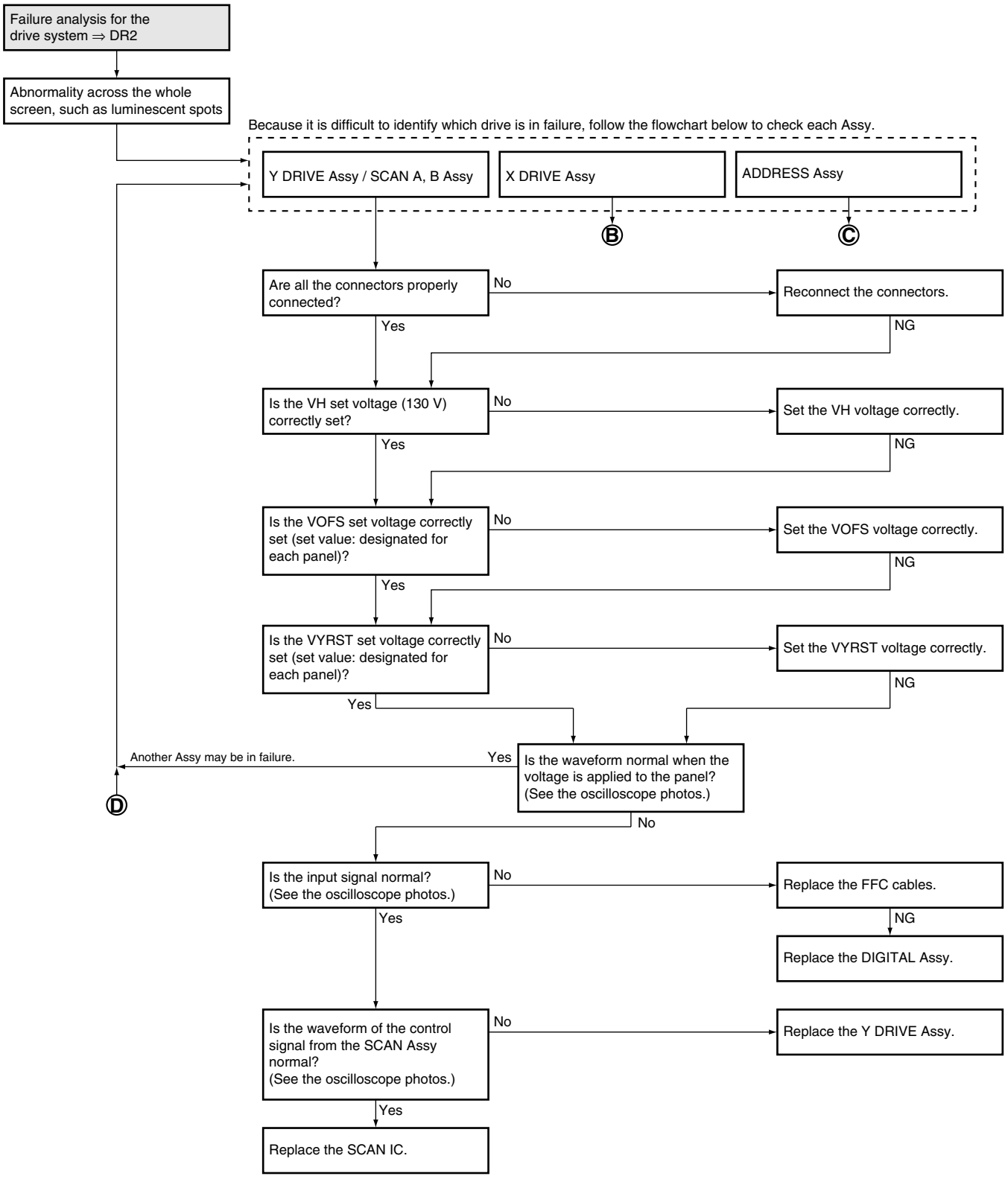
Flowchart of Failure Analysis for The DIGITAL Assy

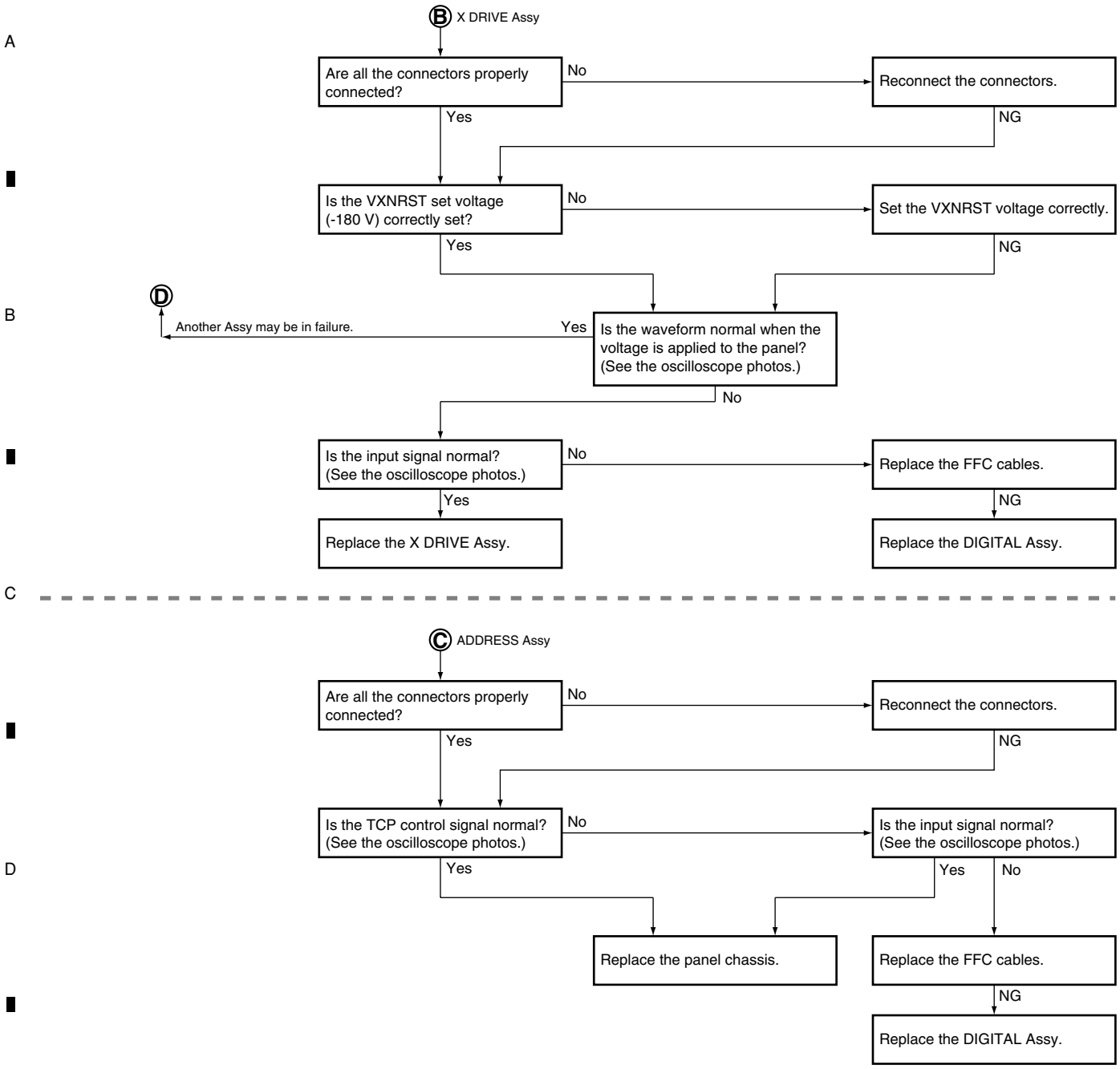

Failure analysis for the DIGITAL Assy ⇒ DG1
The on-screen display (OSD) is not properly indicated.
• If the OSD is not properly displayed although the panel mask is properly displayed, a failure exists in the path from the output of IC8201 on the MAIN Assy to IC3401 on the DIGITAL Assy.
→ If only the OSD is abnormal, the MAIN Assy is in failure.
Is V sync/H existence judgment detected by issuing the QSI command?
No
Is the sync signal properly output from the MAIN Assy?
No
Replace the MAIN Assy.
If neither the V frequency nor H existence judgment is inappropriate, it is most likely that the output from the DIGITAL Assy is in free run and that the screen only displays reset lighting.
(It is judged that the drive, POWER SUPPLY Unit and the panel are normal.)
Yes
Yes
No
Is the 50-pin FFC cable firmly connected?
No
Firmly connect the 50-pin FFC cable.
When disconnecting the FFC cable, take care not to damage the CN3001 connector on the DIGITAL Assy, which can easily be damaged.
Yes
Is the 50-pin FFC cable broken?
No
Replace the 50-pin FFC cable.
Yes
In a case of D11
Is the FFC connector poorly contacted?
No
Replace the DIGITAL Assy.
Yes
DIGITAL : D11
MAIN : M1
In a case of M1
Replace the MAIN Assy.
Replace the MAIN Assy.
Is the indication position correct?
No
It is most likely that the sync signal is abnormal.
Yes
Is the tone correct?
No
It is most likely that the video signal data are missing.
Yes
Replace the MAIN Assy.

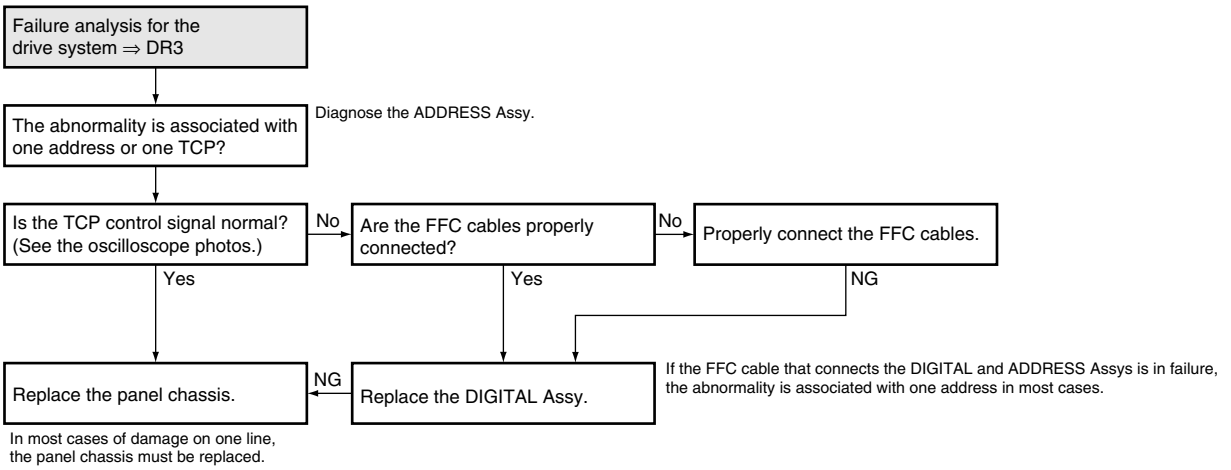
5.1.4 FLOWCHART OF FAILURE ANALYSIS FOR THE DRIVE ASSY

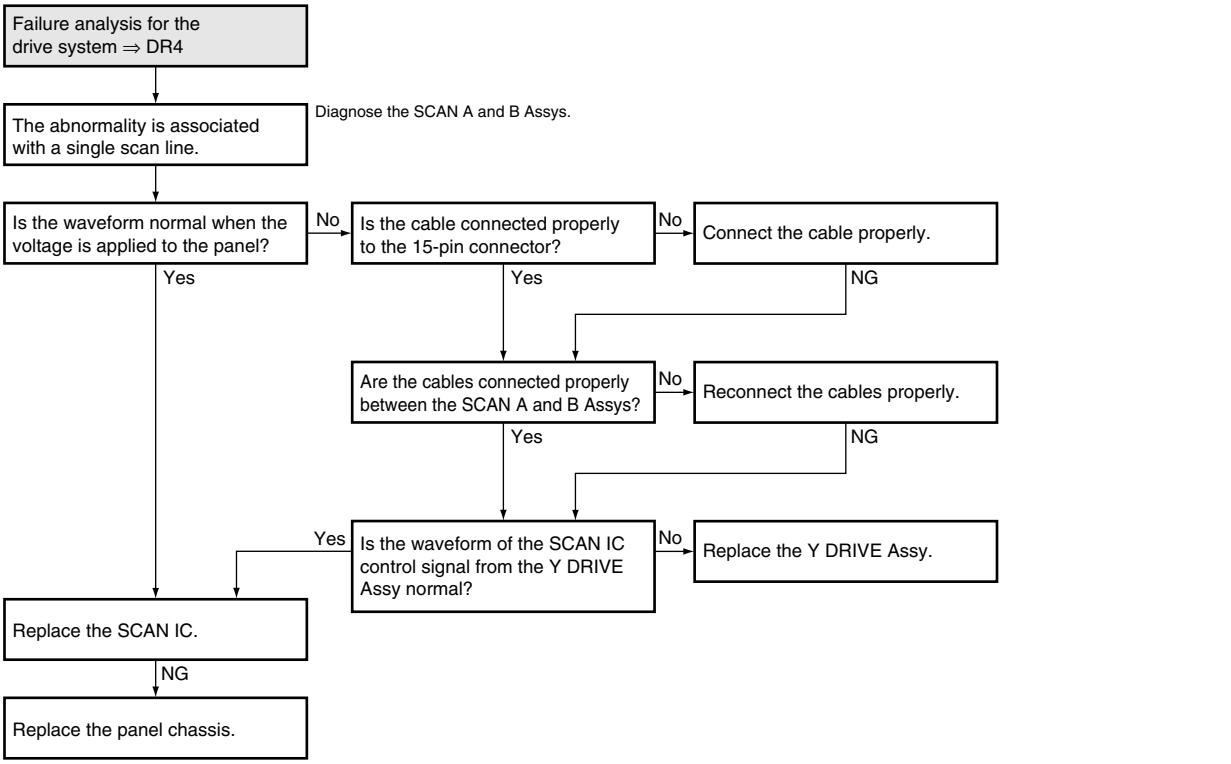
Flowchart of Failure Analysis for The Drive Assy

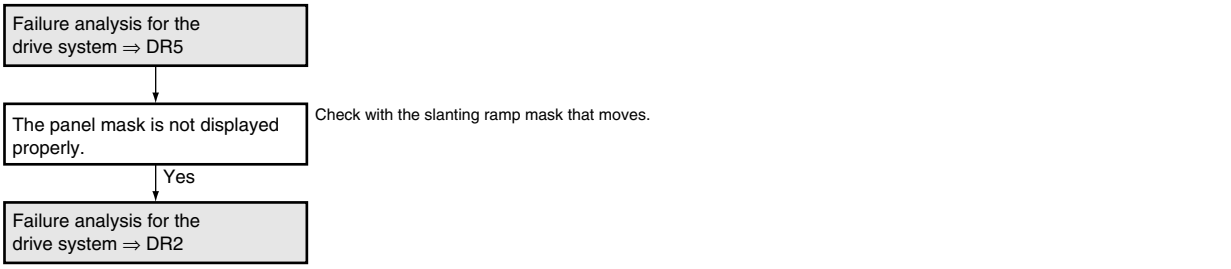



Failure analysis for the drive system ⇒ DR2
Abnormality across the whole screen, such as luminescent spots
Because it is difficult to identify which drive is in failure, follow the flowchart below to check each Assy.
Y DRIVE Assy / SCAN A, B Assy
X DRIVE Assy
ADDRESS Assy
Ⓑ
Ⓒ
Are all the connectors properly connected?
No
Reconnect the connectors.
NG
Yes
Is the VH set voltage (130 V) correctly set?
No
Set the VH voltage correctly.
NG
Yes
Is the VOFS set voltage correctly set (set value: designated for each panel)?
No
Set the VOFS voltage correctly.
NG
Yes
Is the VYRST set voltage correctly set (set value: designated for each panel)?
No
Set the VYRST voltage correctly.
NG
Yes
Is the waveform normal when the voltage is applied to the panel? (See the oscilloscope photos.)
Yes
Another Assy may be in failure.
Ⓓ
No
Is the input signal normal? (See the oscilloscope photos.)
No
Replace the FFC cables.
NG
Replace the DIGITAL Assy.
Yes
Is the waveform of the control signal from the SCAN Assy normal? (See the oscilloscope photos.)
No
Replace the Y DRIVE Assy.
Yes
Replace the SCAN IC.


Ⓑ X DRIVE Assy
Are all the connectors properly connected?
No
Reconnect the connectors.
NG
Yes
Is the VXNRST set voltage (-180 V) correctly set?
No
Set the VXNRST voltage correctly.
NG
Yes
Ⓓ
Another Assy may be in failure.
Yes
Is the waveform normal when the voltage is applied to the panel? (See the oscilloscope photos.)
No
Is the input signal normal? (See the oscilloscope photos.)
No
Replace the FFC cables.
NG
Yes
Replace the X DRIVE Assy.
Replace the DIGITAL Assy.
Ⓒ ADDRESS Assy
Are all the connectors properly connected?
No
Reconnect the connectors.
NG
Yes
Is the TCP control signal normal? (See the oscilloscope photos.)
No
Is the input signal normal? (See the oscilloscope photos.)
Yes
Yes
No
Replace the panel chassis.
Replace the FFC cables.
NG
Replace the DIGITAL Assy.

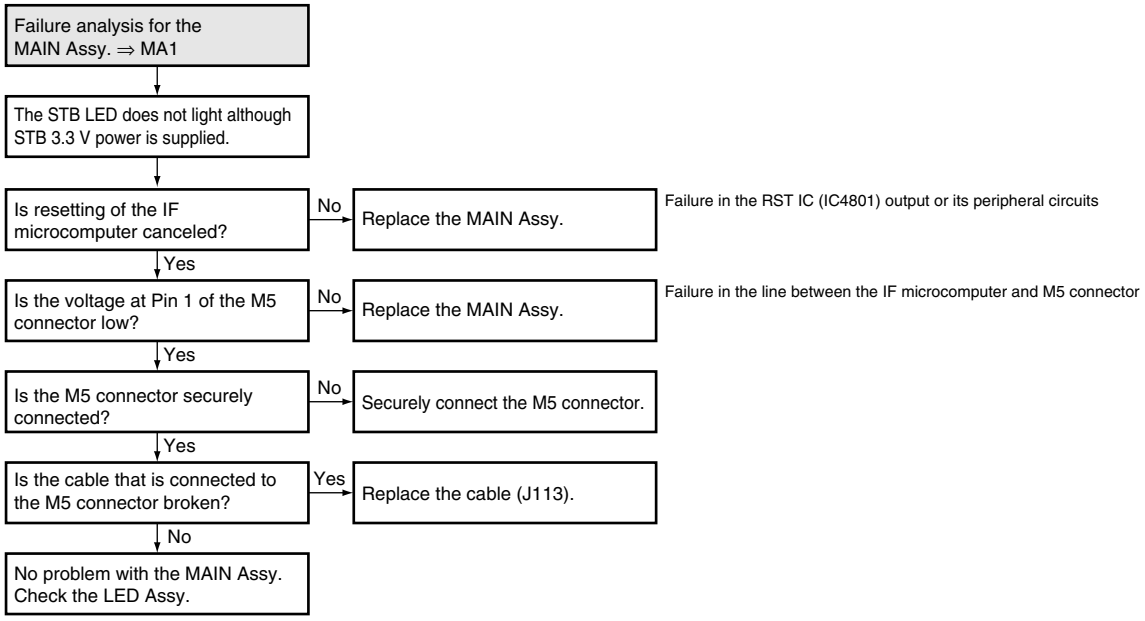

Failure analysis for the drive system ⇒ DR3
The abnormality is associated with one address or one TCP?
Diagnose the ADDRESS Assy.
Is the TCP control signal normal? (See the oscilloscope photos.)
No
Are the FFC cables properly connected?
No
Properly connect the FFC cables.
Yes
Yes
NG
Replace the panel chassis.
NG
Replace the DIGITAL Assy.
If the FFC cable that connects the DIGITAL and ADDRESS Assys is in failure, the abnormality is associated with one address in most cases.
In most cases of damage on one line, the panel chassis must be replaced.

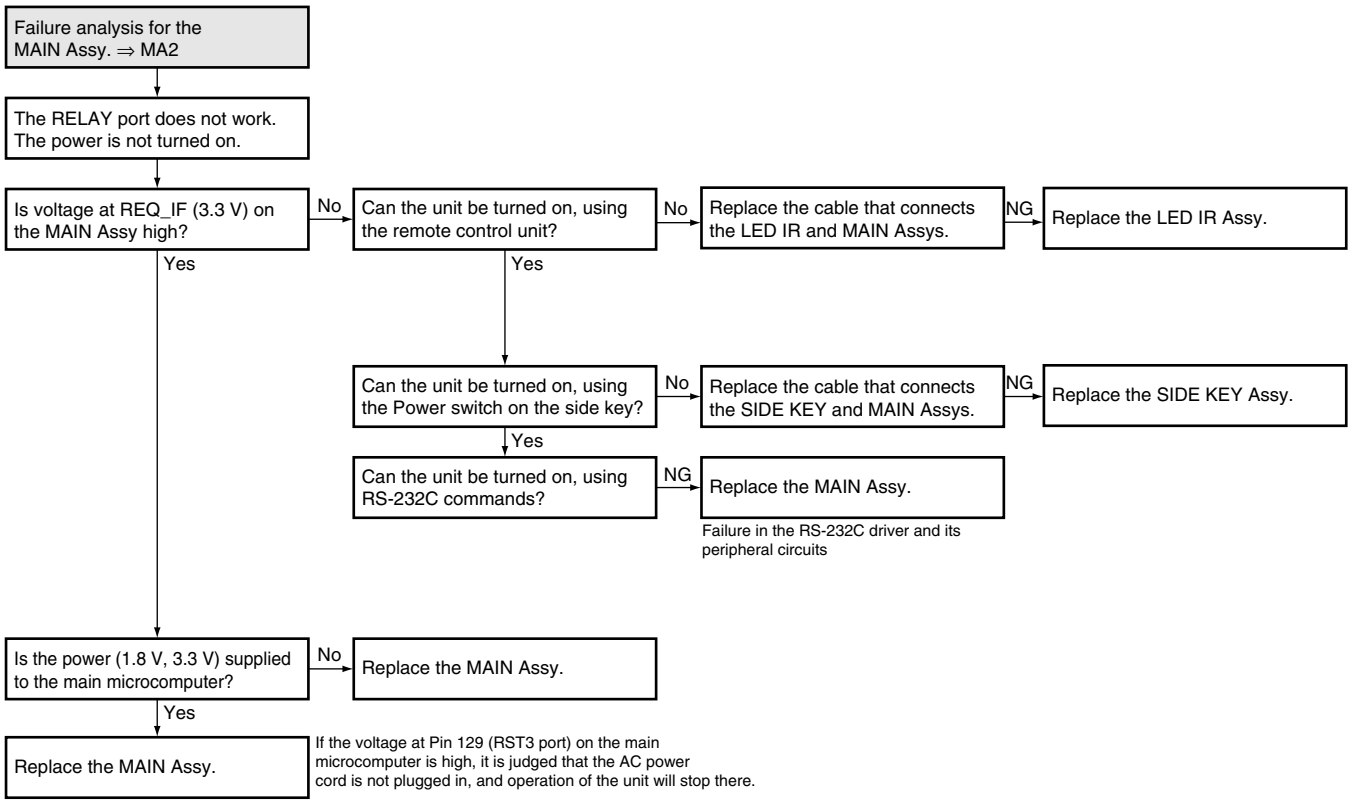

Failure analysis for the drive system ⇒ DR4
The abnormality is associated with a single scan line.
Diagnose the SCAN A and B Assys.
Is the waveform normal when the voltage is applied to the panel?
No
Is the cable connected properly to the 15-pin connector?
No
Connect the cable properly.
Yes
Yes
NG
Are the cables connected properly between the SCAN A and B Assys?
No
Reconnect the cables properly.
Yes
NG
Yes
Is the waveform of the SCAN IC control signal from the Y DRIVE Assy normal?
No
Replace the Y DRIVE Assy.
Replace the SCAN IC.
NG
Replace the panel chassis.


Failure analysis for the drive system ⇒ DR5
The panel mask is not displayed properly.
Check with the slanting ramp mask that moves.
Yes
Failure analysis for the drive system ⇒ DR2

5.1.5 FLOWCHART OF FAILURE ANALYSIS FOR THE MAIN ASSY

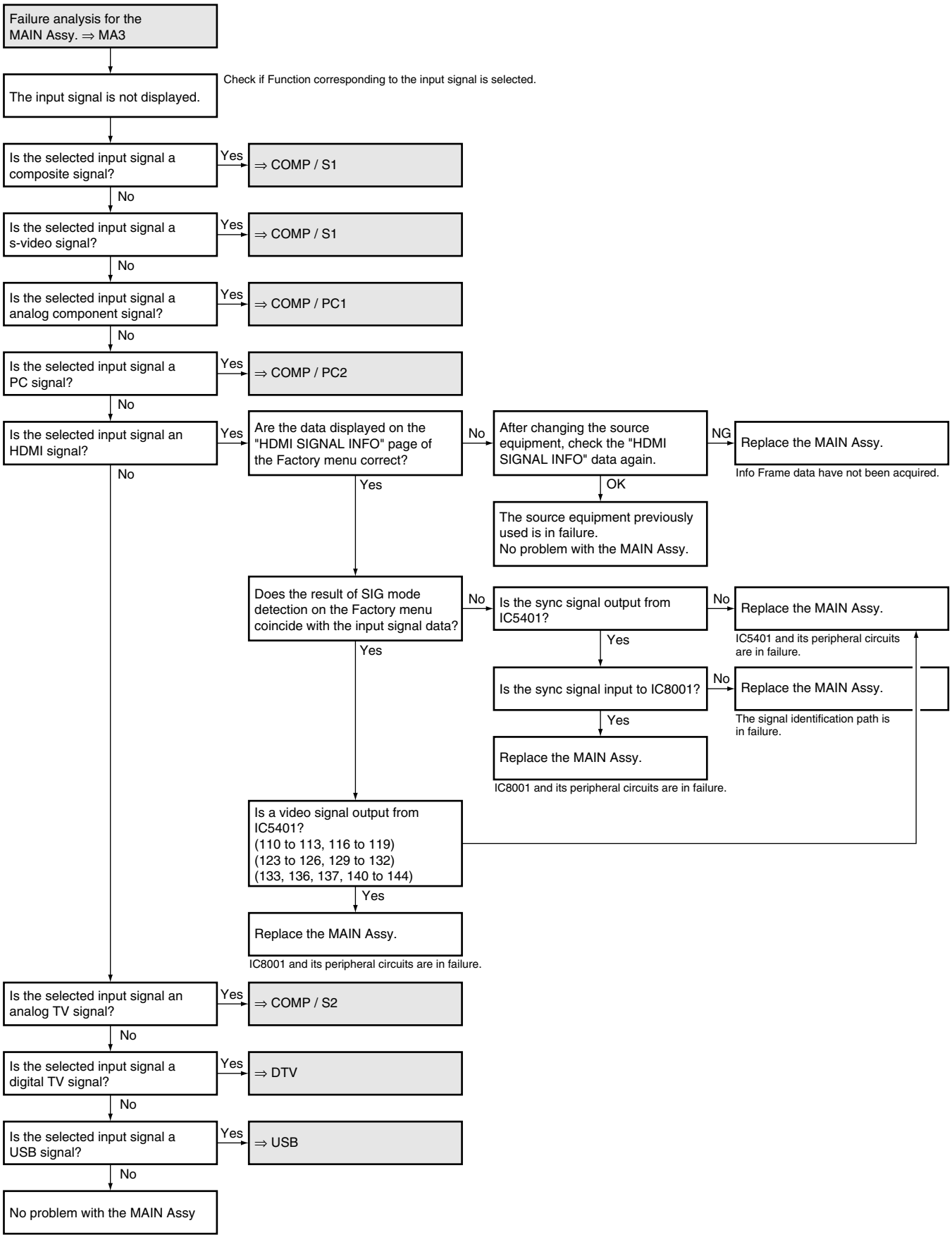
Flowchart of Failure Analysis for The MAIN Assy


Failure analysis for the MAIN Assy. ⇒ MA1
The STB LED does not light although STB 3.3 V power is supplied.
Is resetting of the IF microcomputer canceled?
No
Replace the MAIN Assy.
Failure in the RST IC (IC4801) output or its peripheral circuits
Yes
Is the voltage at Pin 1 of the M5 connector low?
No
Replace the MAIN Assy.
Failure in the line between the IF microcomputer and M5 connector
Yes
Is the M5 connector securely connected?
No
Securely connect the M5 connector.
Yes
Is the cable that is connected to the M5 connector broken?
Yes
Replace the cable (J113).
No
No problem with the MAIN Assy. Check the LED Assy.


Failure analysis for the MAIN Assy. ⇒ MA2
The RELAY port does not work. The power is not turned on.
Is voltage at REQ_IF (3.3 V) on the MAIN Assy high?
No
Can the unit be turned on, using the remote control unit?
No
Replace the cable that connects the LED IR and MAIN Assys.
NG
Replace the LED IR Assy.
Yes
Yes
Can the unit be turned on, using the Power switch on the side key?
No
Replace the cable that connects the SIDE KEY and MAIN Assys.
NG
Replace the SIDE KEY Assy.
Yes
Can the unit be turned on, using RS-232C commands?
NG
Replace the MAIN Assy.
Failure in the RS-232C driver and its peripheral circuits
Is the power (1.8 V, 3.3 V) supplied to the main microcomputer?
No
Replace the MAIN Assy.
Yes
Replace the MAIN Assy.
If the voltage at Pin 129 (RST3 port) on the main microcomputer is high, it is judged that the AC power cord is not plugged in, and operation of the unit will stop there.

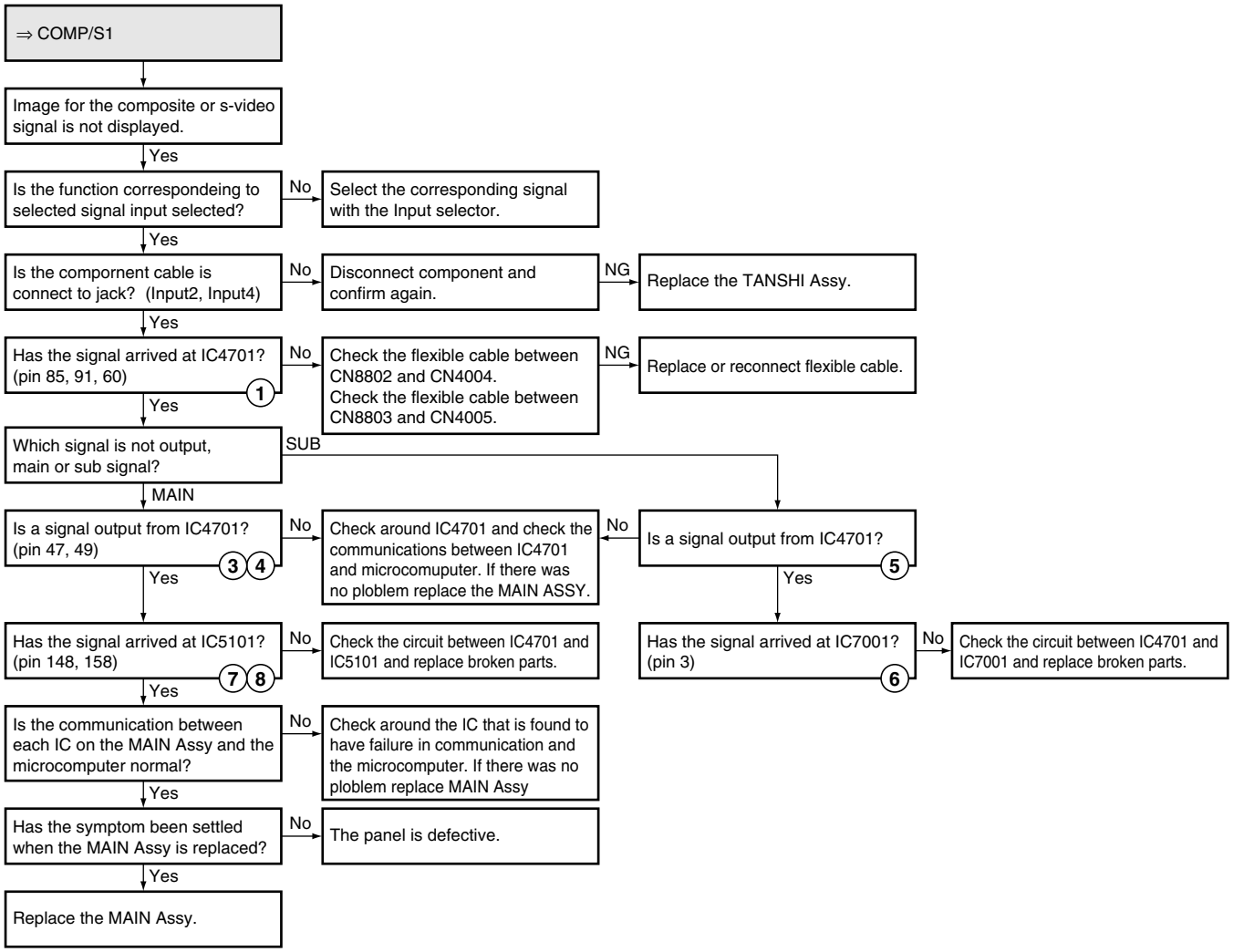
5.1.6 FLOWCHART OF FAILURE ANALYSIS FOR THE VIDEO SYSTEM

Flowchart of Failure Analysis for The Video System


Failure analysis for the MAIN Assy. ⇒ MA3
The input signal is not displayed.
Check if Function corresponding to the input signal is selected.
Is the selected input signal a composite signal?
Yes
⇒ COMP / S1
No
Is the selected input signal a s-video signal?
Yes
⇒ COMP / S1
No
Is the selected input signal a analog component signal?
Yes
⇒ COMP / PC1
No
Is the selected input signal a PC signal?
Yes
⇒ COMP / PC2
No
Is the selected input signal an HDMI signal?
Yes
Are the data displayed on the "HDMI SIGNAL INFO" page of the Factory menu correct?
No
After changing the source equipment, check the "HDMI SIGNAL INFO" data again.
NG
Replace the MAIN Assy.
Info Frame data have not been acquired.
OK
The source equipment previously used is in failure.
No problem with the MAIN Assy.
Yes
Does the result of SIG mode detection on the Factory menu coincide with the input signal data?
No
Is the sync signal output from IC5401?
No
Replace the MAIN Assy.
IC5401 and its peripheral circuits are in failure.
Yes
Is the sync signal input to IC8001?
No
Replace the MAIN Assy.
The signal identification path is in failure.
Yes
Replace the MAIN Assy.
IC8001 and its peripheral circuits are in failure.
Yes
Is a video signal output from IC5401?
(110 to 113, 116 to 119)
(123 to 126, 129 to 132)
(133, 136, 137, 140 to 144)
Yes
Replace the MAIN Assy.
IC8001 and its peripheral circuits are in failure.
No
Is the selected input signal an analog TV signal?
Yes
⇒ COMP / S2
No
Is the selected input signal a digital TV signal?
Yes
⇒ DTV
No
Is the selected input signal a USB signal?
Yes
⇒ USB
No
No problem with the MAIN Assy

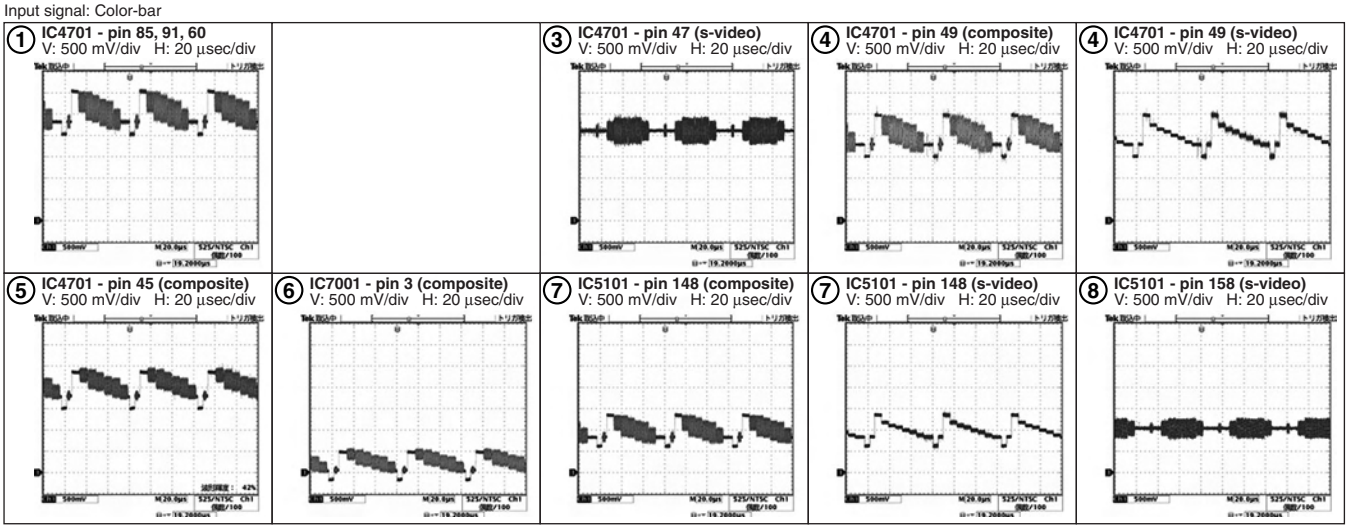
Flowchart of Failure Analysis for The Video System

No video from Composite or S-VIDEO

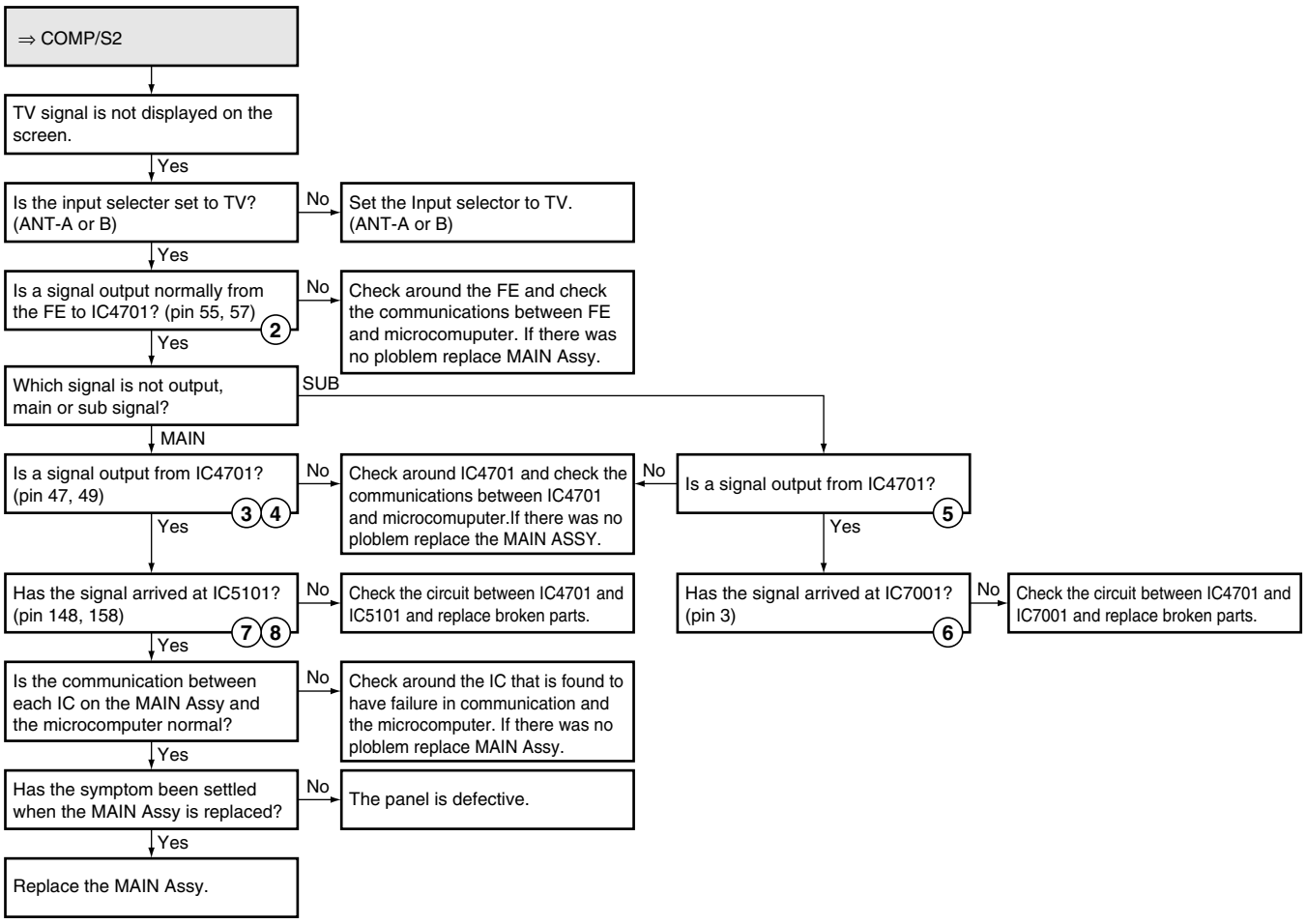

⇒ COMP/S1
Image for the composite or s-video signal is not displayed.
Yes
Is the function correspondeing to selected signal input selected?
No
Select the corresponding signal with the Input selector.
Yes
Is the compornent cable is connect to jack? (Input2, Input4)
No
Disconnect component and confirm again.
NG
Replace the TANSHI Assy.
Yes
Has the signal arrived at IC4701? (pin 85, 91, 60)
1
No
Check the flexible cable between CN8802 and CN4004.
Check the flexible cable between CN8803 and CN4005.
NG
Replace or reconnect flexible cable.
Yes
Which signal is not output, main or sub signal?
SUB
MAIN
Is a signal output from IC4701? (pin 47, 49)
3 4
No
Check around IC4701 and check the communications between IC4701 and microcomuputer. If there was no ploblem replace the MAIN ASSY.
No
Is a signal output from IC4701?
5
Yes
Yes
Has the signal arrived at IC5101? (pin 148, 158)
7 8
No
Check the circuit between IC4701 and IC5101 and replace broken parts.
Has the signal arrived at IC7001? (pin 3)
6
No
Check the circuit between IC4701 and IC7001 and replace broken parts.
Yes
Is the communication between each IC on the MAIN Assy and the microcomputer normal?
No
Check around the IC that is found to have failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
The panel is defective.
Yes
Replace the MAIN Assy.

● Waveforms

Input signal: Color-bar


① IC4701 - pin 85, 91, 60
V: 500 mV/div H: 20 µsec/div
③ IC4701 - pin 47 (s-video)
V: 500 mV/div H: 20 µsec/div
④ IC4701 - pin 49 (composite)
V: 500 mV/div H: 20 µsec/div
④ IC4701 - pin 49 (s-video)
V: 500 mV/div H: 20 µsec/div
⑤ IC4701 - pin 45 (composite)
V: 500 mV/div H: 20 µsec/div
⑥ IC7001 - pin 3 (composite)
V: 500 mV/div H: 20 µsec/div
⑦ IC5101 - pin 148 (composite)
V: 500 mV/div H: 20 µsec/div
⑦ IC5101 - pin 148 (s-video)
V: 500 mV/div H: 20 µsec/div
⑧ IC5101 - pin 158 (s-video)
V: 500 mV/div H: 20 µsec/div

No video from TV signal

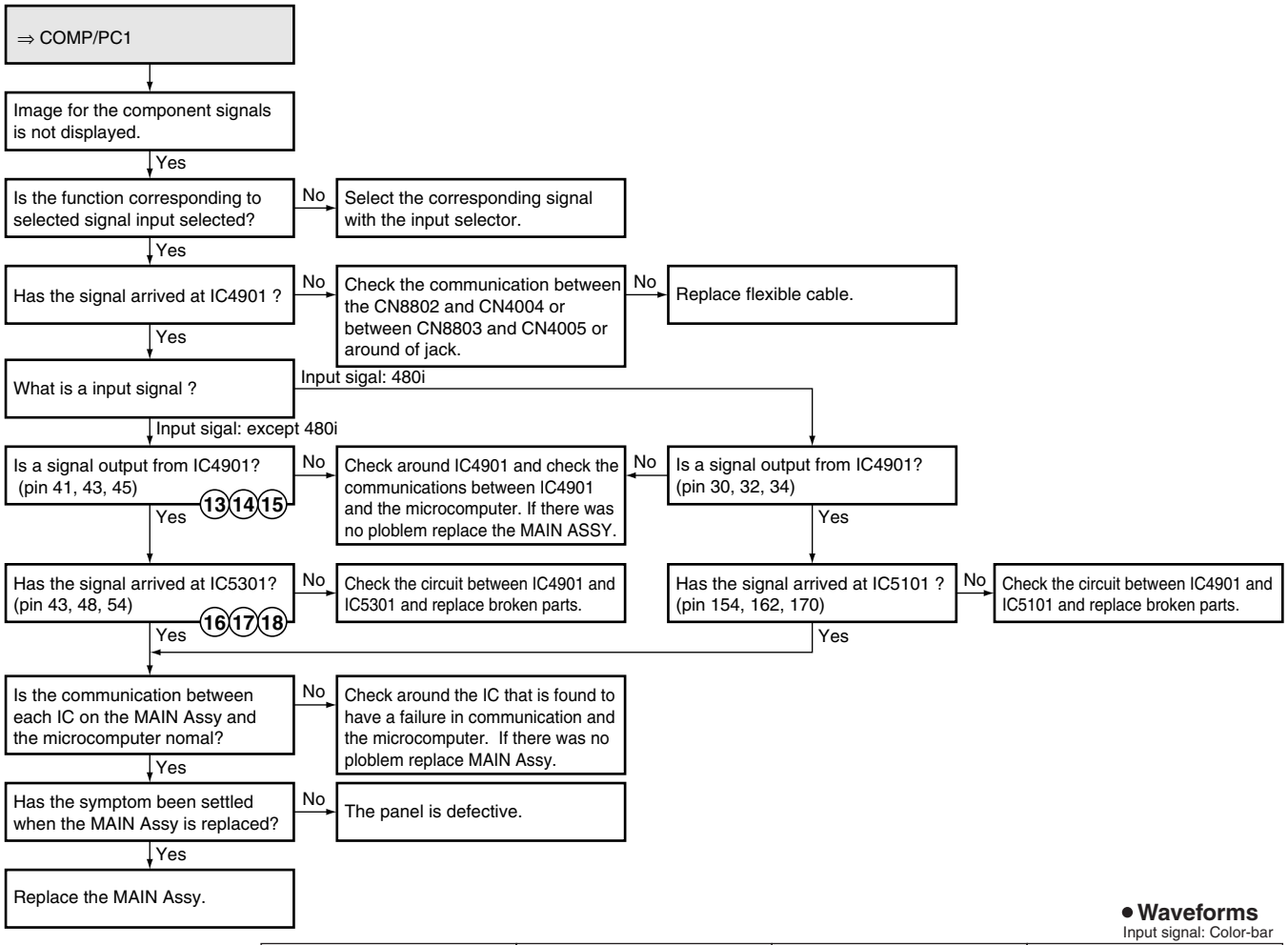

⇒ COMP/S2
TV signal is not displayed on the screen.
Yes
Is the input selecter set to TV? (ANT-A or B)
No
Set the Input selector to TV. (ANT-A or B)
Yes
Is a signal output normally from the FE to IC4701? (pin 55, 57)
2
No
Check around the FE and check the communications between FE and microcomuputer. If there was no ploblem replace MAIN Assy.
Yes
Which signal is not output, main or sub signal?
SUB
MAIN
Is a signal output from IC4701? (pin 47, 49)
3 4
No
Check around IC4701 and check the communications between IC4701 and microcomuputer.If there was no ploblem replace the MAIN ASSY.
No
Is a signal output from IC4701?
5
Yes
Yes
Has the signal arrived at IC5101? (pin 148, 158)
7 8
No
Check the circuit between IC4701 and IC5101 and replace broken parts.
Has the signal arrived at IC7001? (pin 3)
6
No
Check the circuit between IC4701 and IC7001 and replace broken parts.
Yes
Is the communication between each IC on the MAIN Assy and the microcomputer normal?
No
Check around the IC that is found to have failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
The panel is defective.
Yes
Replace the MAIN Assy.

● Waveforms

Input signal: Color-bar

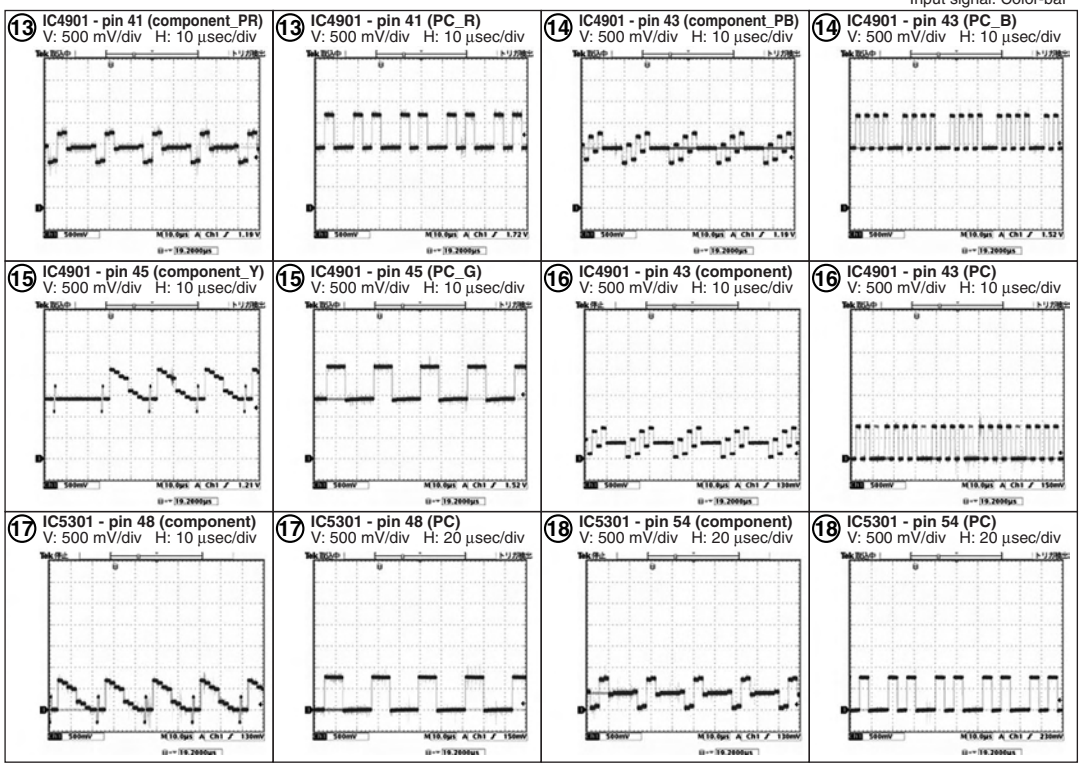
	② **IC4701 - pin 55, 57** V: 500 mV/div H: 20 µsec/div	③ **IC4701 - pin 47 (s-video)** V: 500 mV/div H: 20 µsec/div	④ **IC4701 - pin 49 (composite)** V: 500 mV/div H: 20 µsec/div	④ **IC4701 - pin 49 (s-video)** V: 500 mV/div H: 20 µsec/div
⑤ **IC4701 - pin 45 (composite)** V: 500 mV/div H: 20 µsec/div	⑥ **IC7001 - pin 3 (composite)** V: 500 mV/div H: 20 µsec/div	⑦ **IC5101 - pin 148 (composite)** V: 500 mV/div H: 20 µsec/div	⑦ **IC5101 - pin 148 (s-video)** V: 500 mV/div H: 20 µsec/div	⑧ **IC5101 - pin 158 (s-video)** V: 500 mV/div H: 20 µsec/div

No video from component

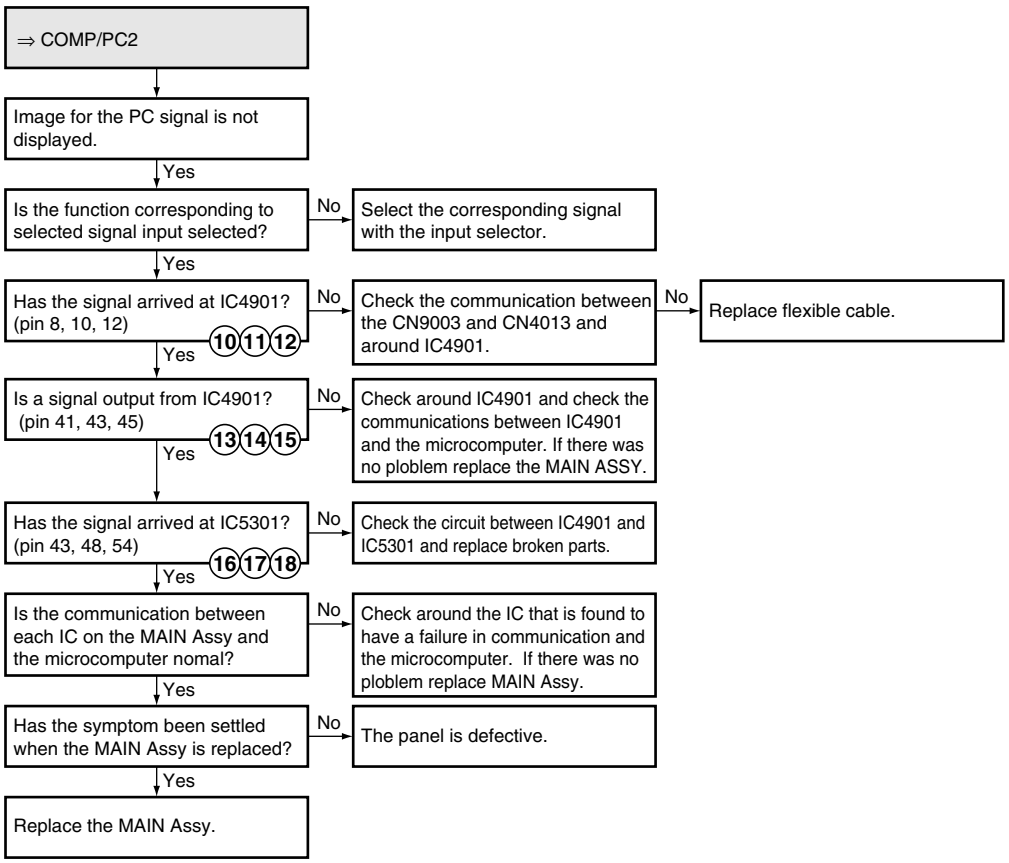

⇒ COMP/PC1
Image for the component signals is not displayed.
Yes
Is the function corresponding to selected signal input selected?
No
Select the corresponding signal with the input selector.
Yes
Has the signal arrived at IC4901 ?
No
Check the communication between the CN8802 and CN4004 or between CN8803 and CN4005 or around of jack.
No
Replace flexible cable.
Yes
What is a input signal ?
Input sigal: 480i
Input sigal: except 480i
Is a signal output from IC4901? (pin 41, 43, 45)
13 14 15
No
Check around IC4901 and check the communications between IC4901 and the microcomputer. If there was no ploblem replace the MAIN ASSY.
No
Is a signal output from IC4901? (pin 30, 32, 34)
Yes
Yes
Has the signal arrived at IC5301? (pin 43, 48, 54)
16 17 18
No
Check the circuit between IC4901 and IC5301 and replace broken parts.
Has the signal arrived at IC5101 ? (pin 154, 162, 170)
No
Check the circuit between IC4901 and IC5101 and replace broken parts.
Yes
Yes
Is the communication between each IC on the MAIN Assy and the microcomputer nomal?
No
Check around the IC that is found to have a failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
The panel is defective.
Yes
Replace the MAIN Assy.

● Waveforms

Input signal: Color-bar

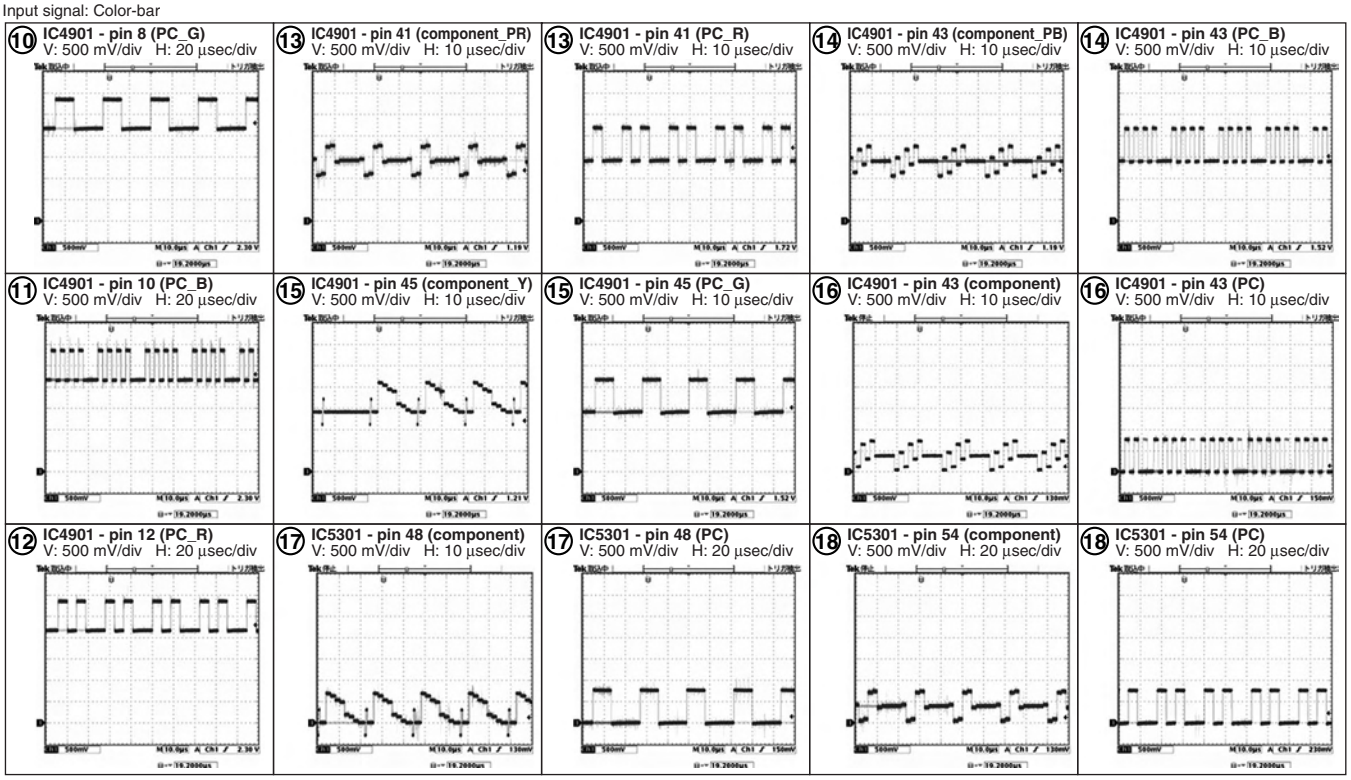

13 IC4901 - pin 41 (component_PR)
V: 500 mV/div H: 10 µsec/div
13 IC4901 - pin 41 (PC_R)
V: 500 mV/div H: 10 µsec/div
14 IC4901 - pin 43 (component_PB)
V: 500 mV/div H: 10 µsec/div
14 IC4901 - pin 43 (PC_B)
V: 500 mV/div H: 10 µsec/div
15 IC4901 - pin 45 (component_Y)
V: 500 mV/div H: 10 µsec/div
15 IC4901 - pin 45 (PC_G)
V: 500 mV/div H: 10 µsec/div
16 IC4901 - pin 43 (component)
V: 500 mV/div H: 10 µsec/div
16 IC4901 - pin 43 (PC)
V: 500 mV/div H: 10 µsec/div
17 IC5301 - pin 48 (component)
V: 500 mV/div H: 10 µsec/div
17 IC5301 - pin 48 (PC)
V: 500 mV/div H: 20 µsec/div
18 IC5301 - pin 54 (component)
V: 500 mV/div H: 20 µsec/div
18 IC5301 - pin 54 (PC)
V: 500 mV/div H: 20 µsec/div

No video from PC


⇒ COMP/PC2
Image for the PC signal is not displayed.
Yes
Is the function corresponding to selected signal input selected?
No
Select the corresponding signal with the input selector.
Yes
Has the signal arrived at IC4901? (pin 8, 10, 12)
10 11 12
No
Check the communication between the CN9003 and CN4013 and around IC4901.
No
Replace flexible cable.
Yes
Is a signal output from IC4901? (pin 41, 43, 45)
13 14 15
No
Check around IC4901 and check the communications between IC4901 and the microcomputer. If there was no ploblem replace the MAIN ASSY.
Yes
Has the signal arrived at IC5301? (pin 43, 48, 54)
16 17 18
No
Check the circuit between IC4901 and IC5301 and replace broken parts.
Yes
Is the communication between each IC on the MAIN Assy and the microcomputer nomal?
No
Check around the IC that is found to have a failure in communication and the microcomputer. If there was no ploblem replace MAIN Assy.
Yes
Has the symptom been settled when the MAIN Assy is replaced?
No
The panel is defective.
Yes
Replace the MAIN Assy.

● Waveforms

Input signal: Color-bar


10 IC4901 - pin 8 (PC_G) V: 500 mV/div H: 20 µsec/div
13 IC4901 - pin 41 (component_PR) V: 500 mV/div H: 10 µsec/div
13 IC4901 - pin 41 (PC_R) V: 500 mV/div H: 10 µsec/div
14 IC4901 - pin 43 (component_PB) V: 500 mV/div H: 10 µsec/div
14 IC4901 - pin 43 (PC_B) V: 500 mV/div H: 10 µsec/div
11 IC4901 - pin 10 (PC_B) V: 500 mV/div H: 20 µsec/div
15 IC4901 - pin 45 (component_Y) V: 500 mV/div H: 10 µsec/div
15 IC4901 - pin 45 (PC_G) V: 500 mV/div H: 10 µsec/div
16 IC4901 - pin 43 (component) V: 500 mV/div H: 10 µsec/div
16 IC4901 - pin 43 (PC) V: 500 mV/div H: 10 µsec/div
12 IC4901 - pin 12 (PC_R) V: 500 mV/div H: 20 µsec/div
17 IC5301 - pin 48 (component) V: 500 mV/div H: 10 µsec/div
17 IC5301 - pin 48 (PC) V: 500 mV/div H: 20 µsec/div
18 IC5301 - pin 54 (component) V: 500 mV/div H: 20 µsec/div
18 IC5301 - pin 54 (PC) V: 500 mV/div H: 20 µsec/div

No video from USB input

⇒ USB

The image of the USB card doesn't come out.

Yes

Has the function is selected Home Media Gallery by Home menu?
- No → Select the input of specification by the input switch.

Yes

Is the contents list are appear?
- No → Has USB memory or digital camerra is connected to USB connecter?
  - NG → Insert USB device such as USB flash memory.

Yes

Has the signal come to IC6301?
- No → Check around USB connecter or USB cable and check between pin 2, 3 of CN7101 and pin 305, 406 of IC6301.
  - NG → Replace USB cable.

Yes

Is the signal from IC6301 to IC7201?
- No → Check between IC6301 and IC7201. If there is no problem then replace IC6301.

Yes

Is the signal input from IC7201 to IC8001?
- No → Check between IC7201 and IC8001. If there is no problem replace IC7201.

Yes

Has the symptom been settled when the MAIN Assy is replaced?
- No → The panel is defective.

Yes

Replace the MAIN Assy.

No monitor output

⇒ MONI_V

MONITOR OUT image is not displayed.

Yes

Is a signal being input other than the component or RGB signal?
- No → Only the component and RGB signals cannot be output from MONITOR OUT. Check the unit using either the component or RGB signal.

Yes

Has the signal arrived to IC4701?
- No → Check the communication between the jack and IC4701. If there was no ploblem replace IO Assy.

Yes

Is a signal output from IC4701? (pin 79) (28)
- No → Check around IC4701 and check the communications between IC4701 and the microcomputer. If there was no ploblem then replace the MAIN ASSY.

Yes

Is a signal arrived to CN8803?
- No → Check the communication from IC4701 to CN4005. If there is no ploblem, check the Flexible cable between CN4005 and CN8803.
  - NG → Replace flexible cable.

Yes

Is a signal output from jack? (29)
- No → Check the communication between the CN8803 and Jack. If there was no ploblem replace IO Assy.

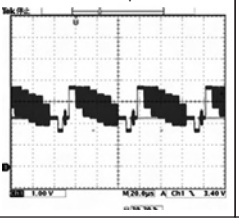
Yes

Finishing troubleshooting.

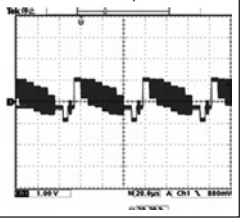
● Waveforms

Input signal: Color-bar

(28) **IC4701 - pin 79**
V: 1 V/div H: 20 µsec/div



(29) **R8801**
V: 1 V/div H: 20 µsec/div



5.1.7 FLOWCHART OF FAILURE ANALYSIS FOR THE AUDIO SYSTEM

Flowchart of Failure Analysis for The Audio System

No audio from monitor out

⇒ MONI_A

The sound is not emitted audio out.

Yes

Is a signal output from IC4701? (pin 33, 34) (30)
- No → Check the surrounding of IC4701 and each input signal. If there was no ploblem, replace the MAIN ASSY.

Yes

Has the signal arrived at CN4005?
- No → Check the communication between IC4701 and CN4005.
  - NG → Replace the MAIN Assy.

Yes

Is a signal output from CN8803?
- No → Check the Flexible cable between CN4005 and CN8803.
  - NG → Replace or reconnect flexible cable.

Yes

Has the signal come to TP8825 or TP8826?
- No → Check the contact between the CN8803 and R8886. Check the contact between the CN8803 and R8887.
  - NG → Replace the TANSHI Assy.

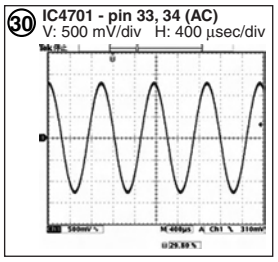
Yes

Is a signal output from jack?
- No → Check the communication between the CN8803 and Jack. If there was no ploblem, replace IO Assy.
  - NG → Replace the TANSHI Assy.

Yes

Finishing troubleshooting.

● Waveforms
Input signal: 1kHz
Sound volume is fixed to 25.



No audio output from subwoofer

⇒ SUB-W

Has the sound been emitted from the Subwoofer?
- No → Cansel muting then check again.
  - No → Cansel muting then check again.

Yes

Yes

Is the volume set to 0?
- No → Raise the volume then check again.

Is a signal output from IC4701? (pin 31, 32) (31)
- No → Check the around of IC4701 and each input signal. If there was no ploblem, replace the MAIN ASSY.

Yes

Is a signal output from IC4704? (pin 1, 7) (32)
- No → Check around IC4704.
  - NG → Replace the MAIN Assy.

Yes

Has the signal arrived at CN4005?
- No → Check the communication between IC4704 to CN4005.
  - NG → Replace the MAIN Assy.

Yes

Is a signal output from CN8803?
- No → Check the Flexible cable between CN4005 and CN8803.
  - NG → Replace or reconnect flexible cable.

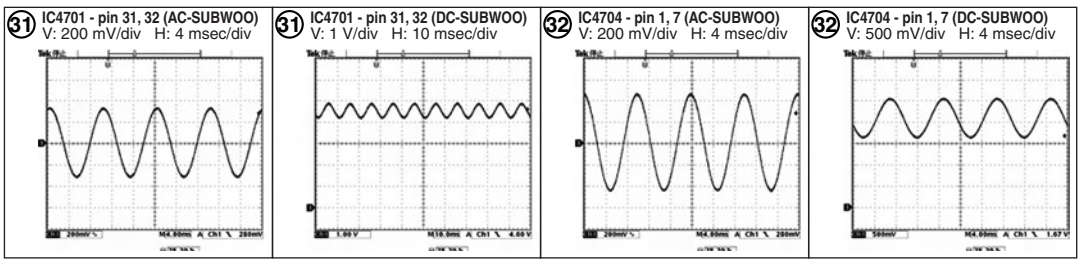
Yes

Has the signal come to TP8843?
- No → Check the contact between the CN8803 and R8892.
  - NG → Replace the TANSHI Assy.

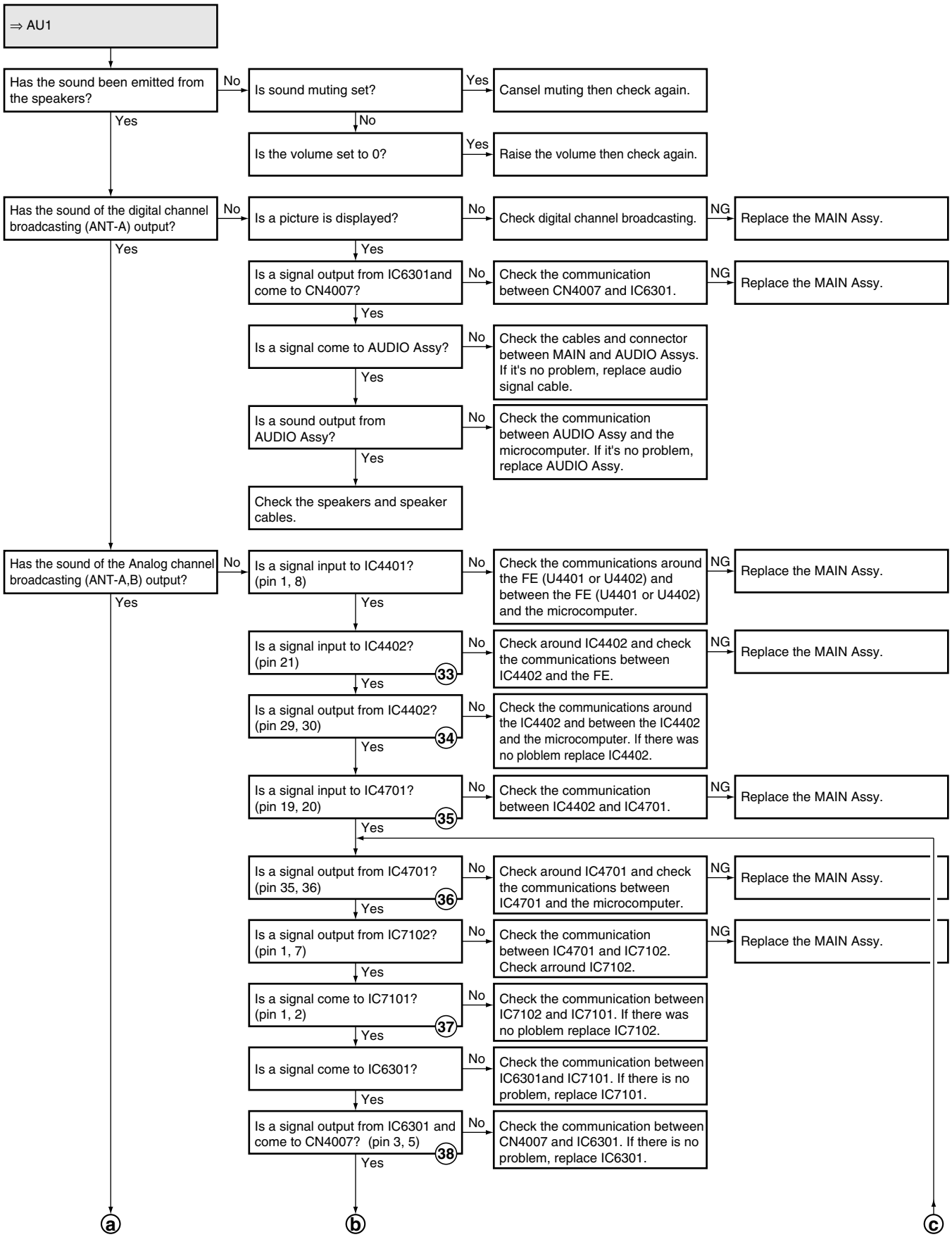
Yes

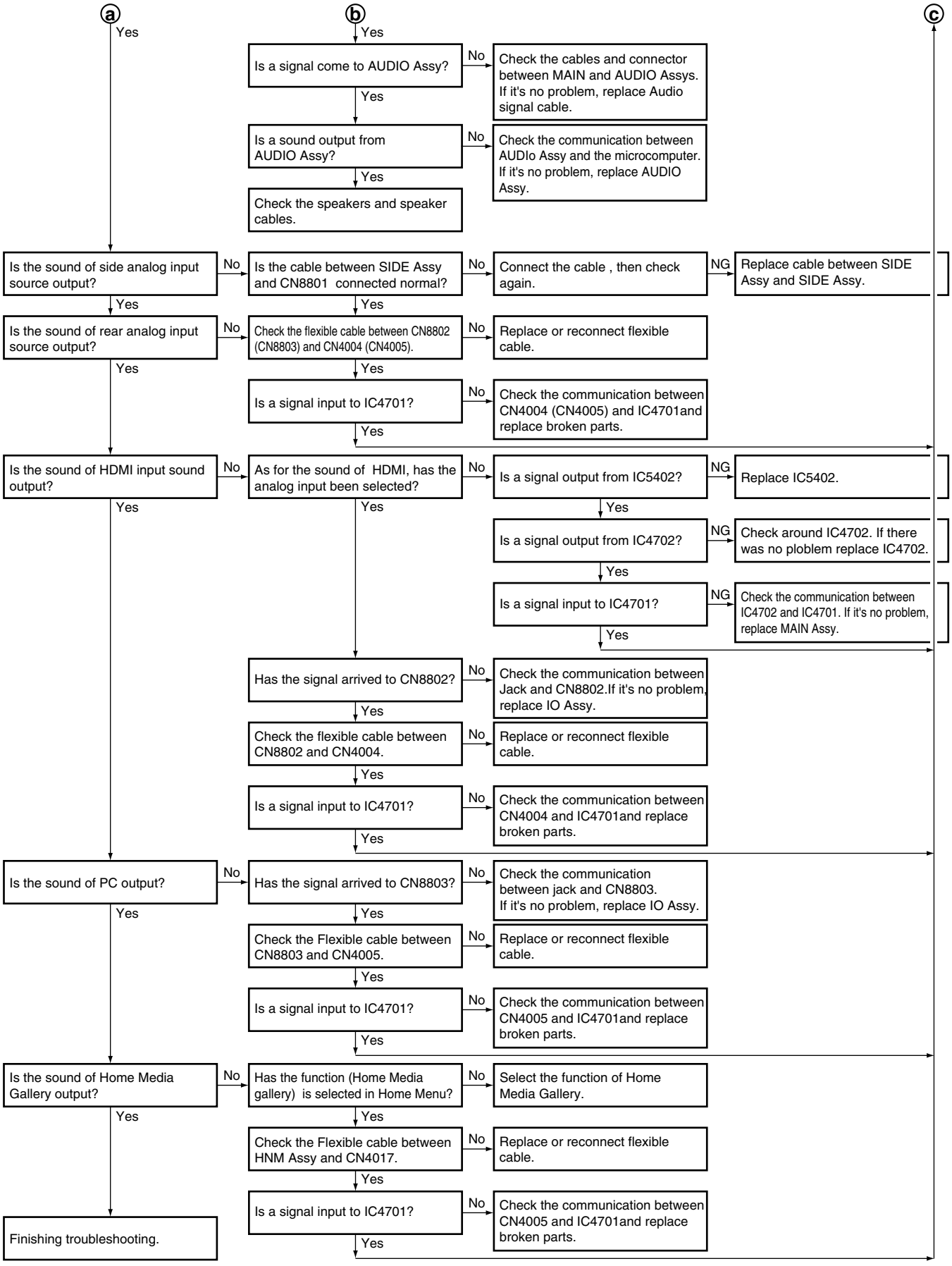
Check the around of pin Jack.

● Waveforms
Input signal: 100 Hz
Sound volume is fixed to 25.


31 IC4701 - pin 31, 32 (AC-SUBWOO)
V: 200 mV/div H: 4 msec/div
31 IC4701 - pin 31, 32 (DC-SUBWOO)
V: 1 V/div H: 10 msec/div
32 IC4704 - pin 1, 7 (AC-SUBWOO)
V: 200 mV/div H: 4 msec/div
32 IC4704 - pin 1, 7 (DC-SUBWOO)
V: 500 mV/div H: 4 msec/div

No sound from panel

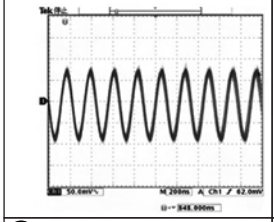

⇒ AU1
Has the sound been emitted from the speakers?
No
Is sound muting set?
Yes
Cansel muting then check again.
Yes
No
Is the volume set to 0?
Yes
Raise the volume then check again.
Has the sound of the digital channel broadcasting (ANT-A) output?
No
Is a picture is displayed?
No
Check digital channel broadcasting.
NG
Replace the MAIN Assy.
Yes
Yes
Is a signal output from IC6301and come to CN4007?
No
Check the communication between CN4007 and IC6301.
NG
Replace the MAIN Assy.
Yes
Is a signal come to AUDIO Assy?
No
Check the cables and connector between MAIN and AUDIO Assys. If it's no problem, replace audio signal cable.
Yes
Is a sound output from AUDIO Assy?
No
Check the communication between AUDIO Assy and the microcomputer. If it's no problem, replace AUDIO Assy.
Yes
Check the speakers and speaker cables.
Has the sound of the Analog channel broadcasting (ANT-A,B) output?
No
Is a signal input to IC4401? (pin 1, 8)
No
Check the communications around the FE (U4401 or U4402) and between the FE (U4401 or U4402) and the microcomputer.
NG
Replace the MAIN Assy.
Yes
Yes
Is a signal input to IC4402? (pin 21)
33
No
Check around IC4402 and check the communications between IC4402 and the FE.
NG
Replace the MAIN Assy.
Yes
Is a signal output from IC4402? (pin 29, 30)
34
No
Check the communications around the IC4402 and between the IC4402 and the microcomputer. If there was no ploblem replace IC4402.
Yes
Is a signal input to IC4701? (pin 19, 20)
35
No
Check the communication between IC4402 and IC4701.
NG
Replace the MAIN Assy.
Yes
Is a signal output from IC4701? (pin 35, 36)
36
No
Check around IC4701 and check the communications between IC4701 and the microcomputer.
NG
Replace the MAIN Assy.
Yes
Is a signal output from IC7102? (pin 1, 7)
No
Check the communication between IC4701 and IC7102. Check arround IC7102.
NG
Replace the MAIN Assy.
Yes
Is a signal come to IC7101? (pin 1, 2)
37
No
Check the communication between IC7102 and IC7101. If there was no ploblem replace IC7102.
Yes
Is a signal come to IC6301?
No
Check the communication between IC6301and IC7101. If there is no problem, replace IC7101.
Yes
Is a signal output from IC6301 and come to CN4007? (pin 3, 5)
38
No
Check the communication between CN4007 and IC6301. If there is no problem, replace IC6301.
Yes
ⓐ
ⓑ
ⓒ


a
b
c
Yes
Is a signal come to AUDIO Assy?
No
Check the cables and connector between MAIN and AUDIO Assys. If it's no problem, replace Audio signal cable.
Is a sound output from AUDIO Assy?
Check the communication between AUDIo Assy and the microcomputer. If it's no problem, replace AUDIO Assy.
Check the speakers and speaker cables.
Is the sound of side analog input source output?
Is the cable between SIDE Assy and CN8801 connected normal?
Connect the cable , then check again.
NG
Replace cable between SIDE Assy and SIDE Assy.
Is the sound of rear analog input source output?
Check the flexible cable between CN8802 (CN8803) and CN4004 (CN4005).
Replace or reconnect flexible cable.
Is a signal input to IC4701?
Check the communication between CN4004 (CN4005) and IC4701and replace broken parts.
Is the sound of HDMI input sound output?
As for the sound of HDMI, has the analog input been selected?
Is a signal output from IC5402?
Replace IC5402.
Is a signal output from IC4702?
Check around IC4702. If there was no ploblem replace IC4702.
Is a signal input to IC4701?
Check the communication between IC4702 and IC4701. If it's no problem, replace MAIN Assy.
Has the signal arrived to CN8802?
Check the communication between Jack and CN8802.If it's no problem, replace IO Assy.
Check the flexible cable between CN8802 and CN4004.
Replace or reconnect flexible cable.
Is a signal input to IC4701?
Check the communication between CN4004 and IC4701and replace broken parts.
Is the sound of PC output?
Has the signal arrived to CN8803?
Check the communication between jack and CN8803. If it's no problem, replace IO Assy.
Check the Flexible cable between CN8803 and CN4005.
Replace or reconnect flexible cable.
Is a signal input to IC4701?
Check the communication between CN4005 and IC4701and replace broken parts.
Is the sound of Home Media Gallery output?
Has the function (Home Media gallery) is selected in Home Menu?
Select the function of Home Media Gallery.
Check the Flexible cable between HNM Assy and CN4017.
Replace or reconnect flexible cable.
Is a signal input to IC4701?
Check the communication between CN4005 and IC4701and replace broken parts.
Finishing troubleshooting.

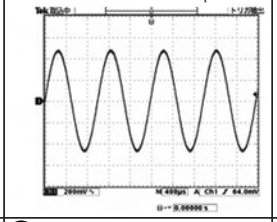
● Waveforms

Input signal: 1kHz
Sound volume is fixed to 25.

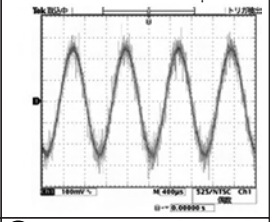
33 **IC4402 - pin 21**
V: 50 mV/div H: 200 nsec/div



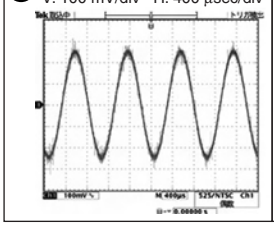
34 **IC4402 - pin 29, 30 (AC)**
V: 200 mV/div H: 400 µsec/div



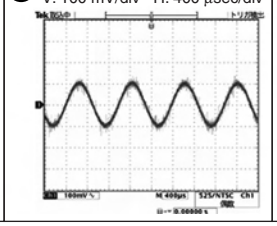
35 **IC4701 - pin 19, 20 (AC)**
V: 100 mV/div H: 400 µsec/div



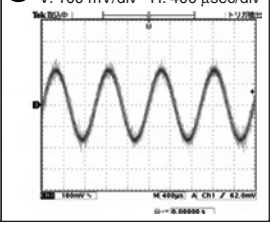
36 **IC4701 - pin 35, 36 (AC)**
V: 100 mV/div H: 400 µsec/div



37 **IC7101 - pin 1, 2 (AC)**
V: 100 mV/div H: 400 µsec/div



38 **IC4007 - pin 3, 5 (AC)**
V: 100 mV/div H: 400 µsec/div



DTV doesn't work

⇒ DTV

DTV (Digital Terrestrial Video) doesn't operate.

Yes

Is the power-supply voltage of CN4002 normal?
- No → Check between CN4002 and P8 (POWER SUPPLY Unit).

Yes

When power ON, is RESET_DT (IC8401 - pin 159) Low after D+3.3V standing up?
- No → Check around IC6902.

Yes

Do you communicate by TXD_DT (IC8401: 103) and RXDDT (IC8401: 102)?
- No → Check between IC8401 (pin 102, 103) and IC6301 (pin 305, 406). Exchange IC6301.
  - NG → Replace the MAIN Assy.

Yes

Is the signal from IC6301 to IC7201?
- No → Check between IC6301 and IC7201. Exchange IC6301 if there is no problem.

Yes

Is the signal input from IC7201 to IC8001?
- No → Check between IC7201 and IC8001. Exchange IC6301 if there is no problem.

Yes

Has the symptom been settled when the MAIN Assy is replaced?
- No → The panel is defective.

Yes

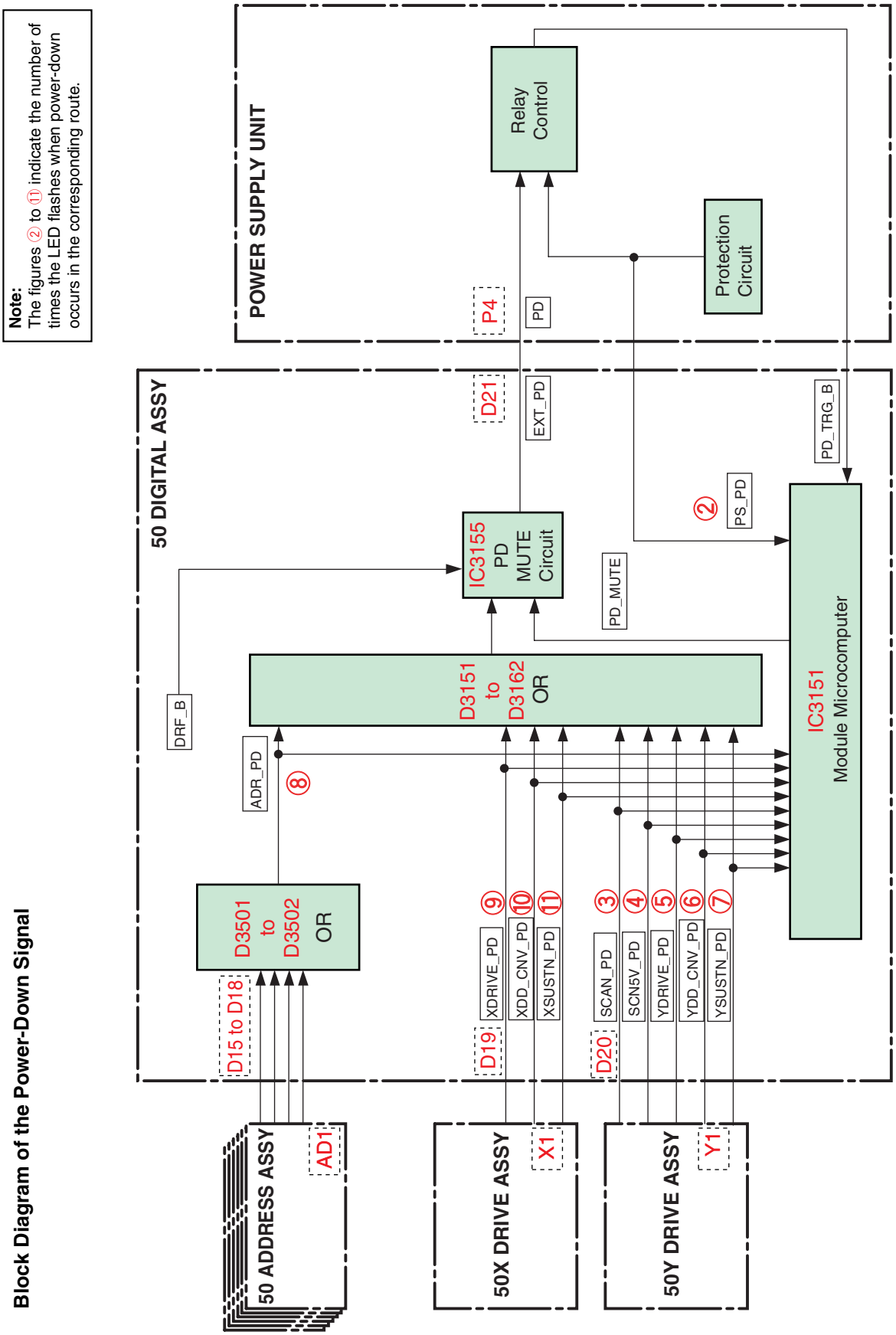
Finishing troubleshooting.

5.2 POWER DOWN

5.2.1 BLOCK DIAGRAM OF THE POWER-DOWN SIGNAL

■ Block Diagram of the Power-Down Signal

Note:
The figures ② to ⑪ indicate the number of times the LED flashes when power-down occurs in the corresponding route.



Block Diagram of the Power-Down Signal

5.2.2 POWER DOWN OF FAILURE ANALYSIS

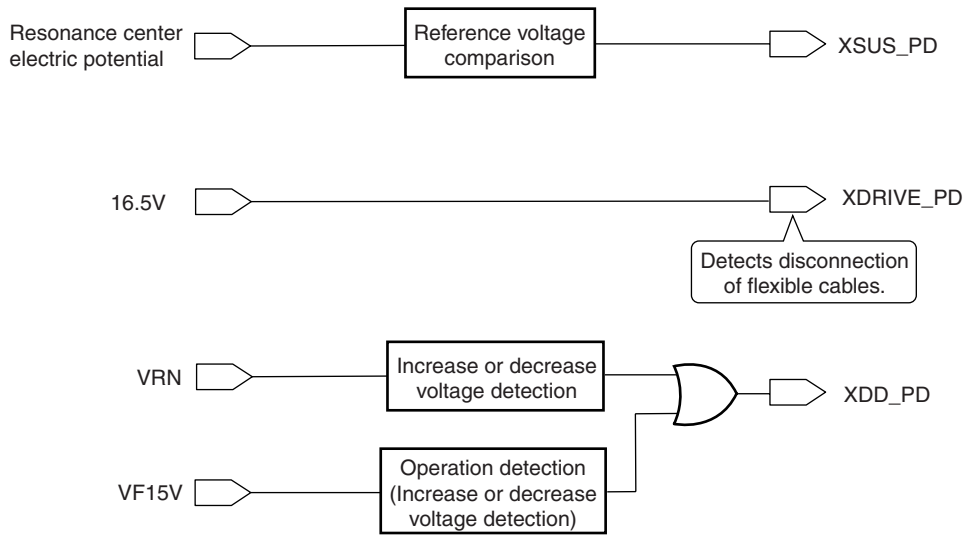
■ Prediction of failure symptoms when a PD (power-down) is generated

LED Flashing Count	PD Circuit	Checkpoint	Main Cause
2	Power supply PD	POWER SUPPLY Unit	Failure in the POWER SUPPLY Unit
3	SCAN PD	50 SCAN A, B Assy	SCAN IC is damaged (short-circuiting between VH and GNDH)
		50Y DRIVE Assy	Connectors disconnected between the POWER SUPPLY Unit and the Y DRIVE Assy Connectors disconnected between the DIGITAL and the Y DRIVE Assys Failure in the VH power
4	IC5V PD	50SCAN A, B Assy	SCAN IC is damaged (short-circuiting between IC5V and GNDH)
			Disconnection of the scan-bridge (15-pin) connector
		50Y DRIVE Assy	Failure in the photo coupler
			Abnormality in the IC5V DC/DC converter
5	Y-DRIVE PD	50Y DRIVE Assy	Abnormality in the 16.5 V power
6	Y DCDC PD	50Y DRIVE Assy	Abnormality in the VOFS DC/DC converter
			Abnormality in the VPRST DC/DC converter
			Abnormality in VC_15V DC/DC converter
7	Y SUS PD	50Y DRIVE Assy	Abnormality in the DK module
			Abnormality in the control signal line
8	Address PD	50 ADDRESS Assy	Short-circuiting of Vadr TCP damaged
9	X-DRIVE PD	50X DRIVE Assy	Connectors disconnected between the DIGITAL and the X DRIVE Assys
			Abnormality in the 16.5 V power
10	X DCDC PD	50X DRIVE Assy	Abnormality in VC_15V power
			Abnormality in VXNRST power
11	X SUS PD	50X DRIVE Assy	Abnormality in the DK module
			Abnormality in the control signal line
			Connectors disconnected between the POWER SUPPLY Unit and the X DRIVE Assy

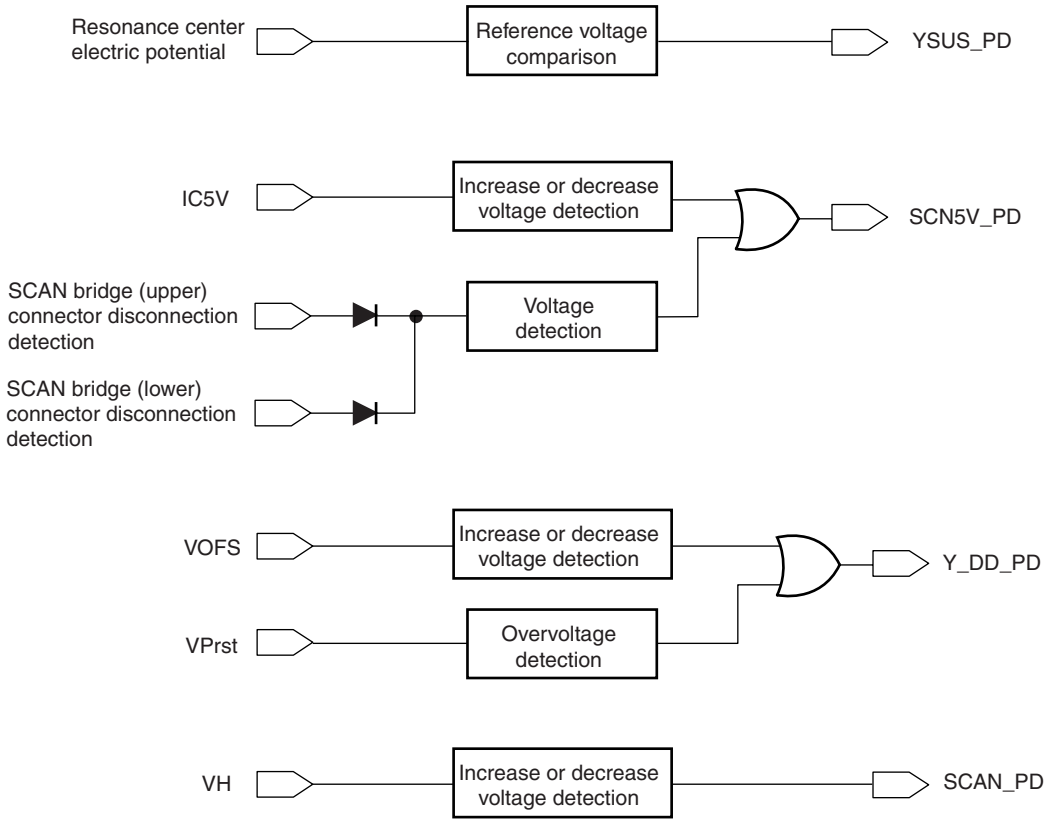
■ How to distinguish which connector is disconnected

Assy	Connector	To which Assy the Connector is Connected	Frequency of LED Flashing	Screen Display
50X DRIVE Assy	CN1001	50 DIGITAL Assy	11 (XDRIVE)	–
	CN1205	POWER SUPPLY Unit (ADR system power)	–	White (left half of the screen)
	CN1204	POWER SUPPLY Unit (drive system power)	12 (X-SUS)	–
	CN1206	50 ADDRESS Assy	8 (ADR)	–
50Y DRIVE Assy	CN2001	50 DIGITAL Assy	3 (SCAN)	–
	CN2204	POWER SUPPLY Unit (drive system power)	3 (SCAN)	–
	CN2206	POWER SUPPLY Unit (ADR system power)	–	White (right half of the screen)
	CN2205	50 ADDRESS Assy	8 (ADR)	–
	CN2601	50 SCAN A, B Assy	4 (SCN-5V)	–
50 SCAN A, B Assy	CN2801	50Y DRIVE Assy	4 (SCN-5V)	–
50 ADDRESS Assy	CN1602, CN1802	50 DIGITAL Assy	8 (ADRS)	–
	CN1601, CN1801	50X DRIVE Assy, 50Y DRIVE Assy	8 (ADRS)	–

X Drive PD system



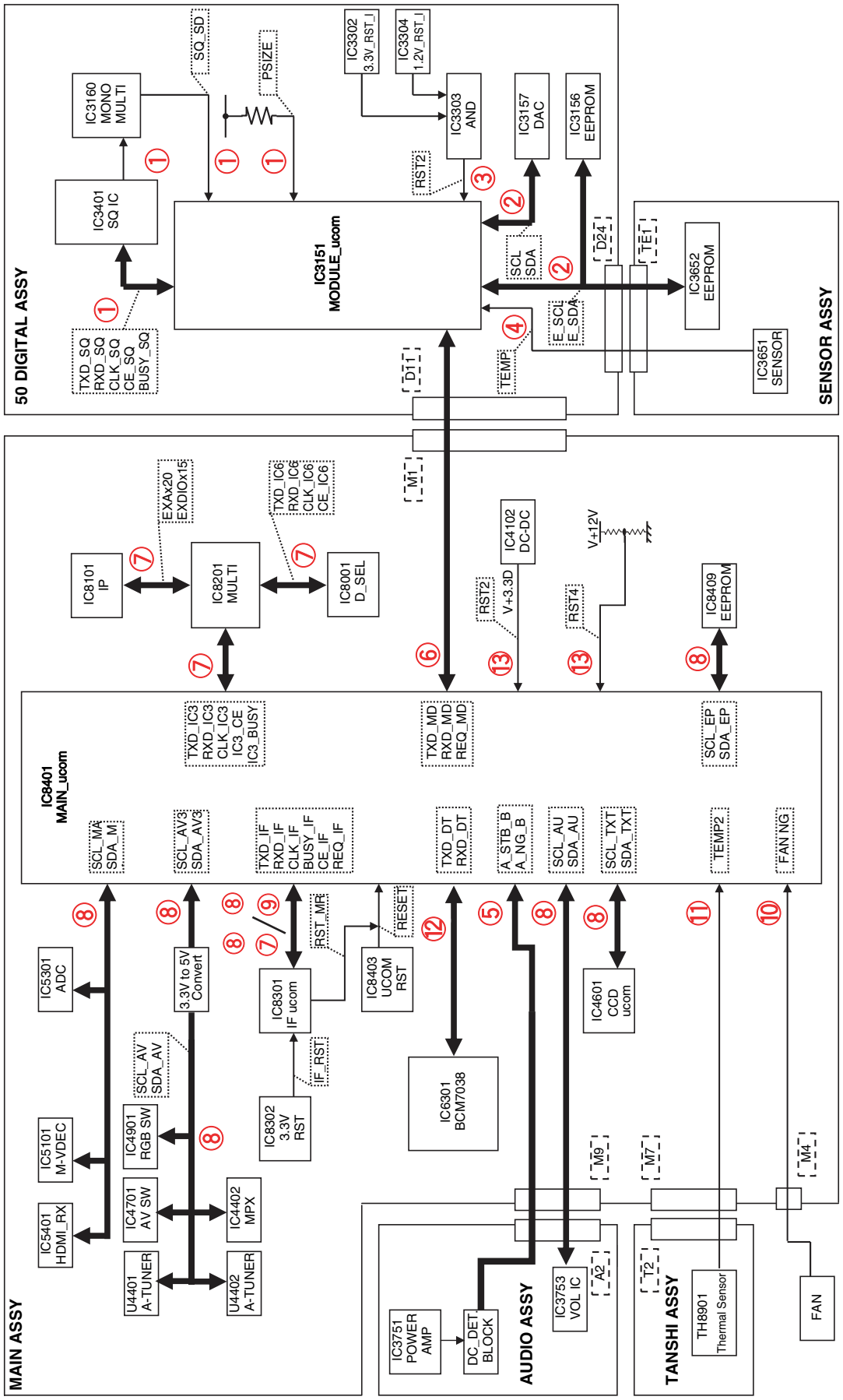
Y Drive PD system



5.3 SHUT DOWN

5.3.1 BLOCK DIAGRAM OF THE SHUT-DOWN SIGNAL

Block Diagram of the Shutdown Signal



Block Diagram of the Shutdown Signal

Note : The figures ① to ⑬ indicate the number of times the LED flashes when shut-down occurs in the corresponding route.

■ SD (SHUT DOWN) DIAGNOSIS

Frequency of LED Flashing	Major Type	Detailed Type	Log Indication in Factory Mode		Checkpoint	Possible Defective Part	Remarks
			MAIN	SUB			
Blue 1	Abnormality in the Sequence Processor	Communication error	SQ-IC	RTRY	CLK_SQ/TXD_SQ, etc.	IC3151, IC3401	SQ_IC communication not established
		Drive stop		SQNO	Check if the video sync signal is input to IC3401.	CN3001, IC3401	If the signal detection by the module microcomputer is properly performed, the unit operates on an external sync.
		Busy		BUSY	BUSY_SQ	IC3401	If BUSY_SQ remains high, a shutdown is generated.
		Incoherent version (hardware, software)		VER-HS	Check the model number of the DIGITAL Assy and the destination of the sequence processor.	IC3301, IC3401	The written SQ_PROG is incoherent with data on the DIGITAL Assy.
Blue 2	Failure in IIC communication with the module microcomputer	DIGITAL Assy EEPROM	MD-IIC	EEPROM	IIC communication line of IC3156	IC3151, IC3156	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
		SENSOR Assy EEPROM		BACKUP	IIC communication line of IC3652	IC3151, IC3652	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
		DAC		DAC	IIC communication line of IC3157	IC3151, IC3157	Check the pull-up resistor of the IIC control line and the power to the corresponding IC.
Blue 3	Abnormality in RST2 power decrease	–	RST2	–	Is the output voltage of the DC-DC converter low?	AXY1135	If RST2 does not become high after the unit is turned on, a shutdown will be generated in several seconds.
					The 12 V power is not output.	POWER SUPPLY Unit	Check if V + 12 V is started.
Blue 4	High temperature of the panel	–	TMP_NG	TEMP1	Ambient temperature	–	If TEMP1 that is read by the module microcomputer is 75°C or higher, a shutdown will be generated.
					Abnormality in the panel temperature sensor	IC3651	Check the connection with the SENSOR Assy.
Blue 5	Short-circuiting of the speakers	–	AUDIO	–	Speaker terminals	CN3753, CN3901, JA3901	Check if any speaker cable is in contact with the chassis.
					AUDIO_AMP	IC3751	Check if the AMP output is short-circuited.
					Periphery of the cable between A2 and M8	CN3752, CN4007	Check if cables are firmly connected.
Blue 6	Failure in communication with the module microcomputer	–	MODULE	–	Communication line between MAIN and MOD	IC3151, IC8401	Check the communication lines (RXD_MOD/RXD_MOD/REQ_MOD).
					Periphery of the cable between D11 and M2	CN3001, CN4001	Check if cables are firmly connected.
Blue 7	Failure in main microcomputer 3-wire serial communication	IF microcomputer	MA-SRL	IF	Communication line between IF and MAIN	IC8301, IC8401	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF).
		MULTI		MULTI	Communication line between MULTI_M and MAIN	IC8201, IC8401	Check the communication lines (TXD_IC3/RXD_IC3/CLK_IC3/CE_IC3/IC3_BUSY).
				I/P	Bus communication line between IP and MULTI_M	IC8101, IC8201	Check the communication lines (EXA/EXDIO).
				D_SEL	Communication line between D_SEL and MULTI_M	IC8001, IC8201	Check the communication lines (TXD_IC6/RXD_IC6/CLK_IC6/CE_IC6).
Blue 8	Failure in IIC communication with the main microcomputer	AV Switch	MA-IIC	AV-SW	IIC communication line between AV_SW and MAIN	IC4701, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		RGB Switch		RGB-SW	IIC communication line between RGB_SW and MAIN	IC4901, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		Analog Tuner		FE1	IIC communication line between A_Tuner and MAIN	U4401, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		Analog Tuner		FE2	IIC communication line between A_Tuner and MAIN	U4402, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		MPX		MPX	IIC communication line between MPX and MAIN	IC4402, IC8401	Check the communication lines (SCL_AV3/SDA_AV3 or SCL_AV/SDA_AV).
		Main VDEC		M-VDEC	IIC communication line between M_VDEC and MAIN	IC5101, IC8401	Check the communication lines (SCL_MA/SDA_MA).
		AD/PLL		ADC	IIC communication line between ADC and MAIN	IC5301, IC8401	Check the communication lines (SCL_MA/SDA_MA).
		HDMI		HDMI	IIC communication line between HDMI_RX and MAIN	IC5401, IC8401	Check the communication lines (SCL_MA/SDA_MA).
		CCD		CCD	IIC communication line between CCD and MAIN	IC4601, IC8401	Check the communication lines (SCL_TXT/SDA_TXT).
		64K EEPROM		MA-EEP	IIC communication line between EEPROM and MAIN	IC8409, IC8401	Check the communication lines (SCL_EP/SDA_EP).
		VOLUME IC		AUDIO	IIC communication line between VOL_IC and MAIN	IC3753, IC8401	Check the communication lines (SCL_AUDIO/SDA_AUDIO).
		VOLUME IC		AUDIO	Periphery of the cable between A2 and M9	CN3752, CN4007	Check if cables are firmly connected.
Blue 9	Failure in communication with the main microcomputer and unknown	–	MAIN	–	Communication line between IF and MAIN	IC8301, IC8303, IC8304, IC8401	Check the communication lines (TXD_IF/RXD_IF/CLK_IF/BUSY_IF/CE_IF/REQ_IF).
Blue 10	Failure in the fan	–	FAN	–	Dirt attached to the fan motor	–	Check the fan.
					Periphery of the cable between fan and M4	CN4009	Check if cables are firmly connected.
					Periphery of the fan control regulator	IC8407	–
Blue 11	High temperature of the unit	–	TEMP2	–	Temperature sensor or its periphery	–	A shutdown is generated if TEMP2 becomes higher than 53°C
					Periphery of the temperature sensor	TH8901, Q8901	TEMP2
					Periphery of the cable between T2 and M7	CN8802, CN4004	Check if cables are firmly connected.
Blue 12	Digital Tuner	–	DTUNER	PS/RST	Startup of IC6301	IC6301	Check startup of BCM7038 and the communication line between IC6301 and MAIN.
				DEVICE	Communication line between MAIN and IC6301	IC6301	Check startup of BCM7038 and the communication line between IC6301 and MAIN.
				TV-G	Startup of the TV-GUIDE application	IC6301	Check startup of the TV-GUIDE application. (*)
				HOME-G	Startup of the HOME-G application	IC6301	Check BCM7038 and its peripheral devices.
Blue 13	Failure in the POWER SUPPLY Unit	DC-DC converter power decrease	MA-PWR	M-DCDC	DC-DC converter or its periphery, RST2	IC4102, Q4106	Check if V + 3.3 V is started.
		POWER SUPPLY		RELAY	The 12 V power is not output, RST4	–	Check if V + 12 V is started.
					Periphery of the cable between P8 and M2	CN4002	Check if cables are firmly connected.

(*) : Check if it becomes banner display when switching channel.

5.4 NON-FAILURE SYMPTOMS

■ Information on symptoms that do not constitute failure

Symptom	Cause, item to check, information
HDMI: Symptoms concerning the input format and settings	
The picture color for an INPUT 5 or 6 signal is not correct.	The color setting for INPUT 5 or 6 is not compatible with that of the output equipment. Check whether the color setting is YPbPr or RGB.
The video signal to INPUT 5 or 6 is not displayed, and a message is displayed.	A unsupported video signal is input. Example: 1080p @ 60Hz
The audio signal input to the INPUT 5 or 6 pin jack is not output.	The audio setting for INPUT 5 or 6 is "AUTO," and a video signal is not input. If the audio setting is "AUTO," to output an analog audio signal, the DVI signal must be input via a DVI-HDMI conversion cable. When the DVI equipment is connected, the analog signals are selected with the setting "AUTO."
No sound of signals to INPUT 5 or 6 is output.	The setting on the side of the HDMI output equipment is wrong. Example: Dolby Digital
MONITOR video output	
The video output signal from the MONITOR connector is deteriorated. Or when the video output signal from the MONITOR connector is recorded, its playback picture is deteriorated.	The video signal output from the MONITOR connector is Macrovision protected.
The video signal is not output when the component signal is input to INPUT 2, 3, or 4.	The video signal is not output from the MONITOR connector when the component signal is selected.
The video signal is not output when the video signal is input to INPUT 5 or 6.	The video signal is not output from the MONITOR connector when the HDMI signal is selected.
MONITOR audio output	
The image displayed on the PDP is not synchronized with the sound from the MONITOR audio output.	The audio signal from the MONITOR connector is synchronized with the video output signal from the MONITOR connector.
DIGITAL audio output	
Playback of the signal from the DIGITAL audio output connector is possible, but recording is not possible.	The video signal output from the DIGITAL connector is copy-protected.
The video output signal from the DIGITAL connector is not synchronized with that from the MONITOR video output.	The digital audio output signal from the DIGITAL connector is synchronized with the video signal that is currently displayed, and not with the MONITOR video output.
Miscellaneous	
The no-signal off function is not activated.	The no-signal off function is effective only while a video signal is being input.
The no-operation off function is not activated.	The no-operation off function is effective only while a video signal is being input.
Power management does not function.	Power management is effective only while a signal is being input from a PC.
The AUTO SETUP function is not activated.	The AUTO SETUP function is effective only while a signal is being input from a PC.
The G-Link system is not activated.	Wrong connection of the cable to the SR connector or PC audio connector is suspected.
Control via the SR connector is not possible.	A failure in the G-Link system or wrong connection of the cable to the PC audio connector is suspected.
The audio signal from the PC is not output.	A failure in the G-Link system or wrong connection of the cable to the SR connector is suspected.
The picture-quality setting (AV Selection) is not stored.	The picture-quality setting is stored for each input. As the setting is changed when another input is selected, the user may have a false idea that the setting is not stored.
The picture size changes arbitrary.	The Auto Size setting is set to ON (default is OFF).
The display position of the screen slightly changes every time the unit is turned on.	The orbiter function for minimizing the effects of phosphor burn is activated. As ON/OFF of this function can only be changed on the Integrator menu, turning off of this function by a user is not possible.
The video signal to the S video connector is not displayed.	Although S video input is selected on the menu, the cable is connected via a component video input connector whose function type is the same as S video input.
The video signal to the composite video connector is not displayed.	Although the composite video input is selected on the menu, the cable is connected via a component video connector or S video connector whose function type is the same as the composite video input.

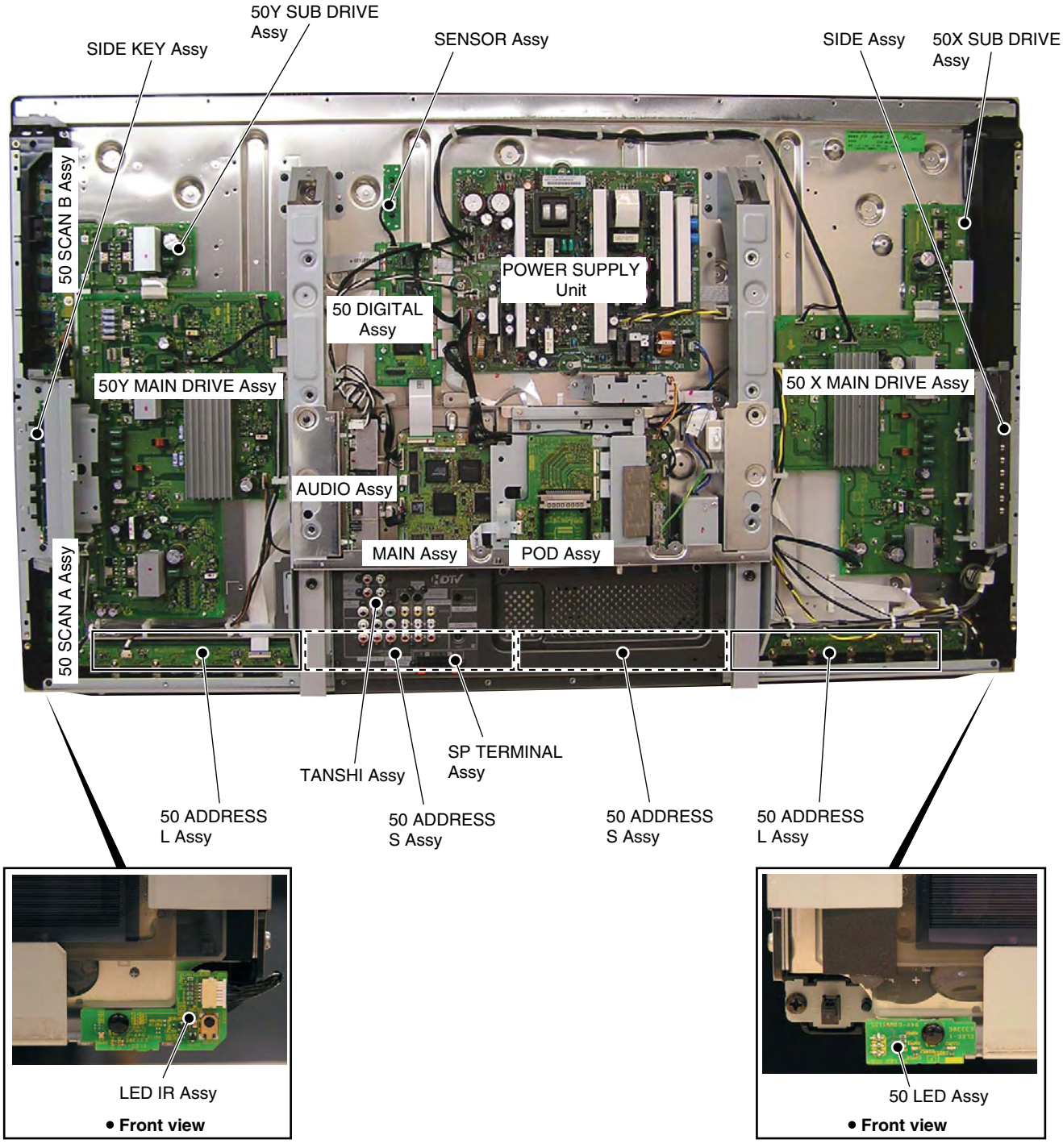
SUPPLEMENT: On the video setting for HDMI

There are three types of HDMI output formats: color difference 4:4:4, color difference 4:2:2, and RGB4:4:4.
(The proportions, such as 4:4:4 and 4:2:2, represent those of the amount of data for video signal components. For example, as for color difference 4:4:4, the proportion of the amount of data as for Y, Cb, and Cr is 4:4:4.)

It is required to make the settings of the PDP according to the settings of the output equipment. For usual operation, however, set them to AUTO. If the color is inappropriate, make the settings manually.
In the HDMI system, video signals are coded at 24 bits per pixel and transmitted as a series of 24-bit pixels. In a case of color difference 4:4:4, Y, Cb, and Cr use 8 bits each. In a case of color difference 4:2:2, Y, Cb, and Cr use 12 bits each, but Cb and Cr are transmitted at a half sampling rate of Y. This unit is capable of processing the upper 10 bits out of 12 bits of video data. Recent high-end DVD players, such as Pioneer DV-79AVi, are capable of outputting 10-bit color-difference signals. In general, it is said that picture quality for color difference 4:2:2 format is assumed to be higher, because human eyes are more sensitive to luminance than to colors. In the case of RGB4:4:4, R, G, and B use 8 bits each.

6. DISASSEMBLY

6.1 PCB LOCATION

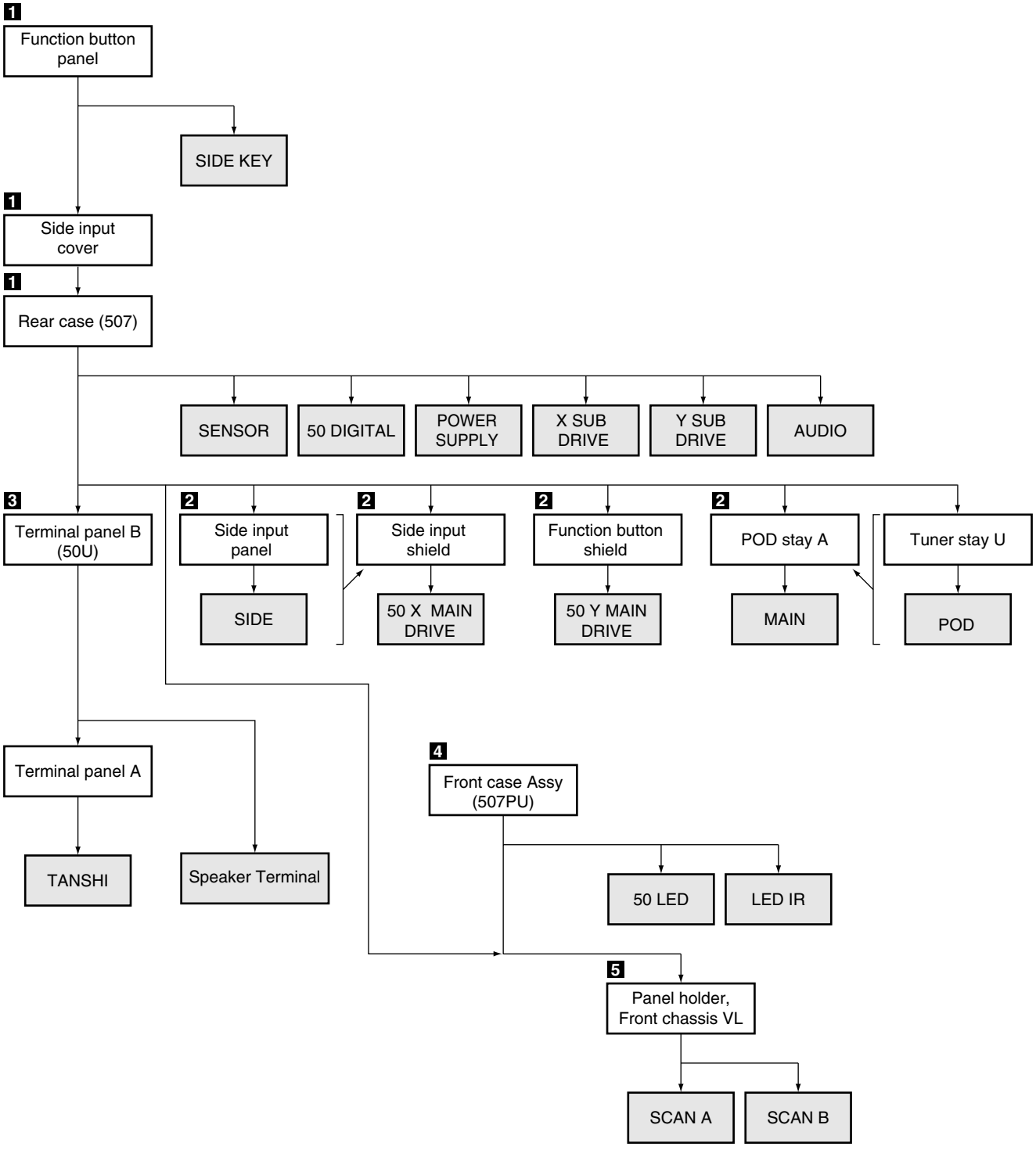


6.2 FLOWCHART OF THE MAIN PARTS AND PC BOARDS EXCHANGE

Note: Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

Chart of removal order for the main parts and boards

It is efficient to proceed with removal of the main parts and boards in the order shown in the chart below:



Disassembly

1 Rear Case (507)

● **Function button panel**

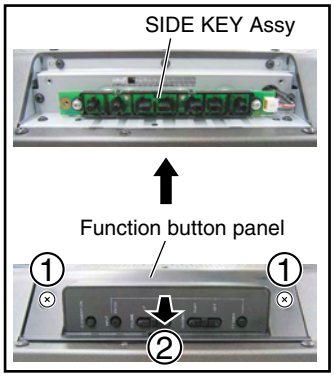
① Remove the two screws.

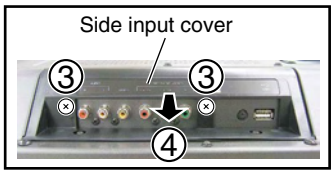
② Remove the function button panel.

● **Side input cover**

③ Remove the two screws.

④ Remove the side input cover.





● **Rear case (507)**

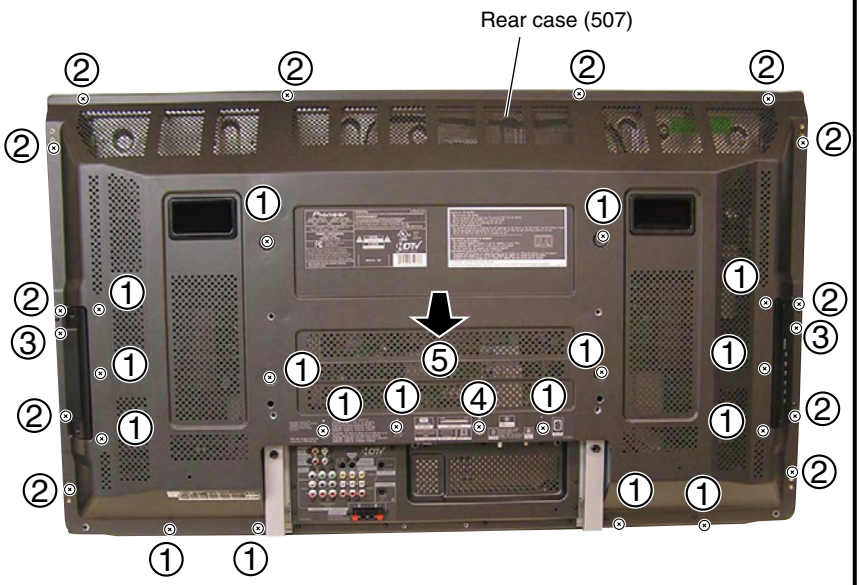
① Remove the 17 screws. (AMZ30P060FTB)

② Remove the 12 screws. (TBZ40P080FTB)

③ Remove the two screws. (ABA1332)

④ Remove the one screw. (ABA1341)

⑤ Remove the rear case (507).



2 Access to PCB Assys

● **SIDE Assy**

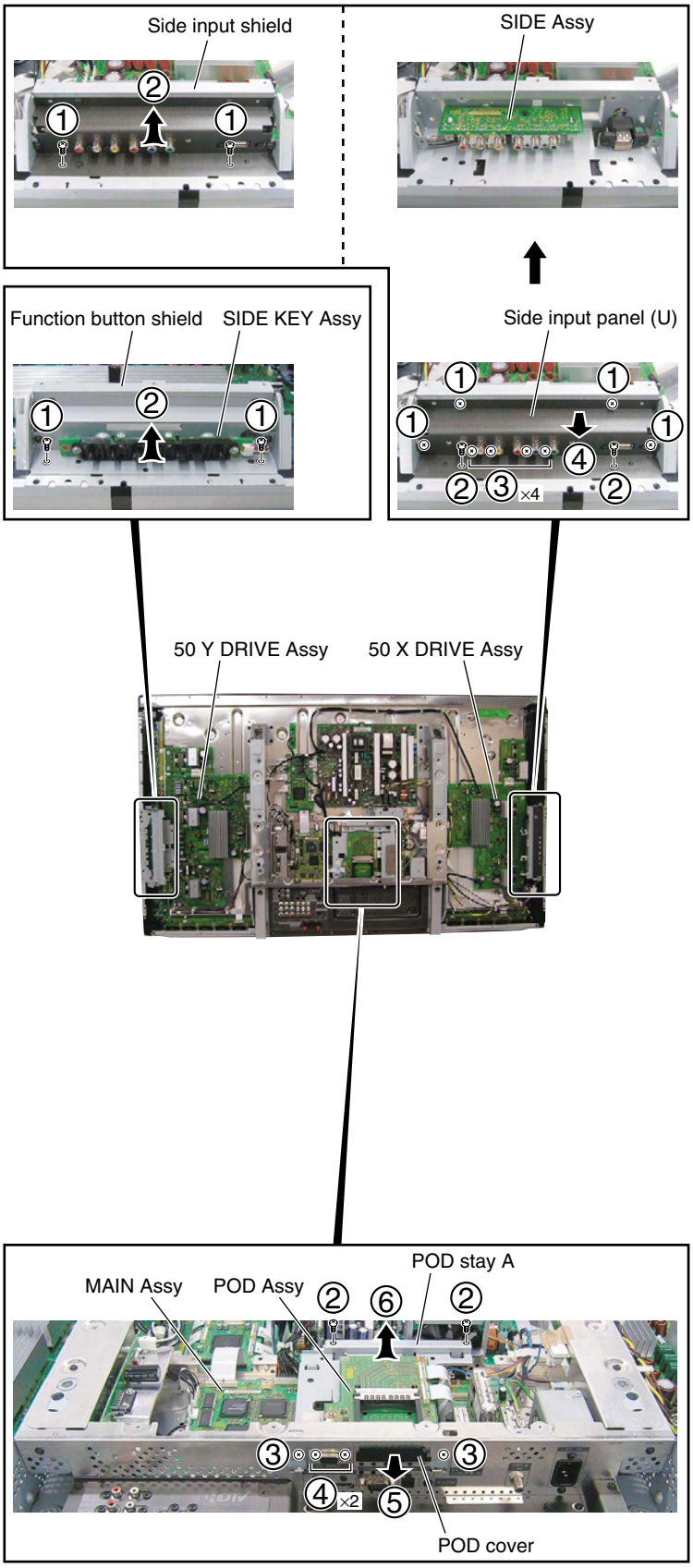
① Remove the four screws.
② Remove the two screws.
③ Remove the four screws.
④ Remove the side input panel (U).

● **50 X DRIVE Assy**

① Remove the two screws.
② Remove the side input shield with PCB.

● **50 Y DRIVE Assy**

① Remove the two screws.
② Remove the function button shield with PCB.



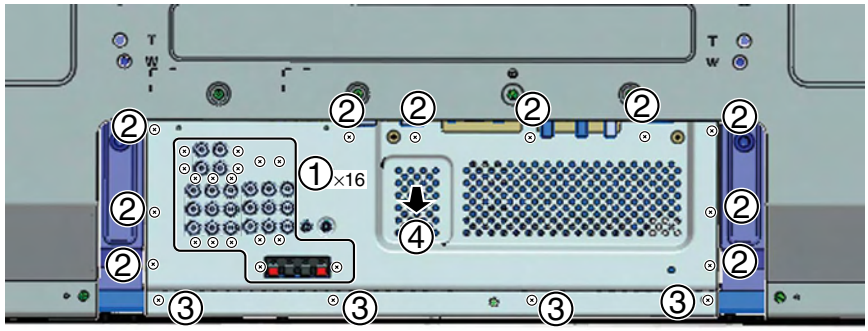
● **MAIN Assy**

① Disconnect cables, connectors, as required.
② Remove the two screws.
③ Remove the two screws.
④ Remove the two hex. head screws.
⑤ Remove the POD cover.
⑥ Remove the POD stay A with PCB.

3 Terminal Panel B (50U)

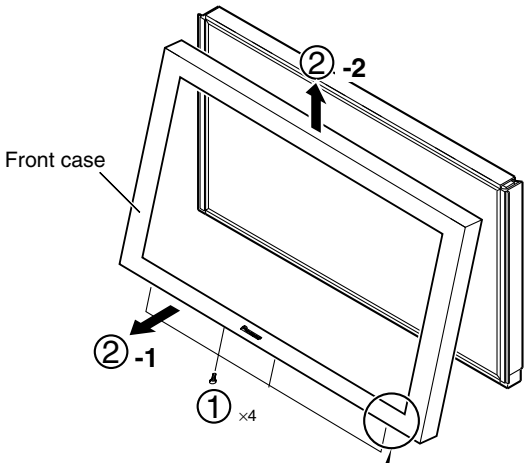
① Remove the 16 screws.
② Remove the 10 screws.
③ Remove the four screws.
④ Remove the terminal panel B (50U).

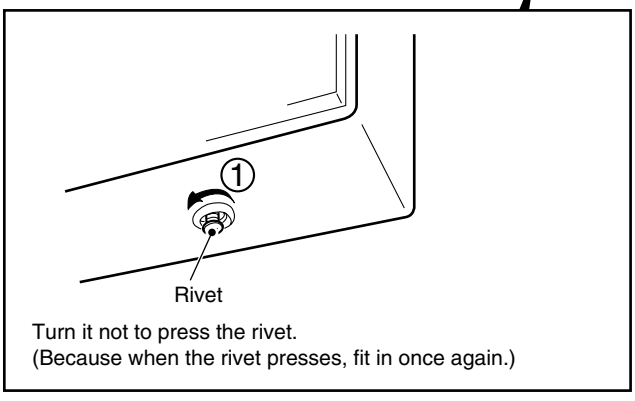
Terminal panel B (50U)



4 Front Case Assy

① Remove the four rivets.
② Remove the Front Case Assy (507PU).

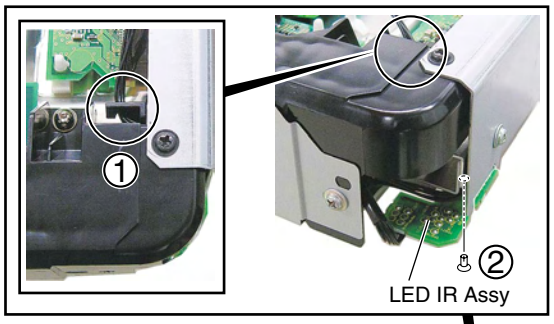


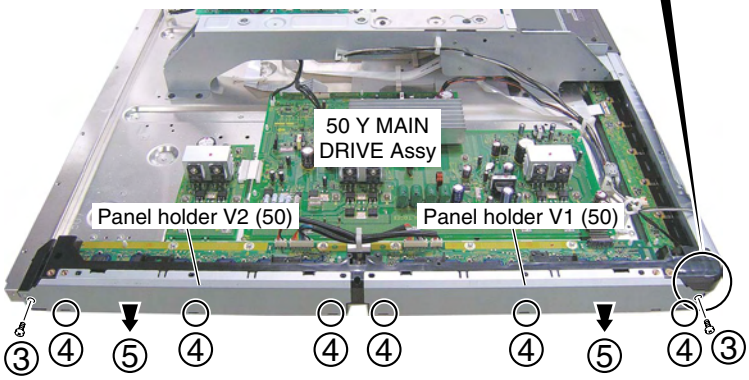


Turn it not to press the rivet.
(Because when the rivet presses, fit in once again.)

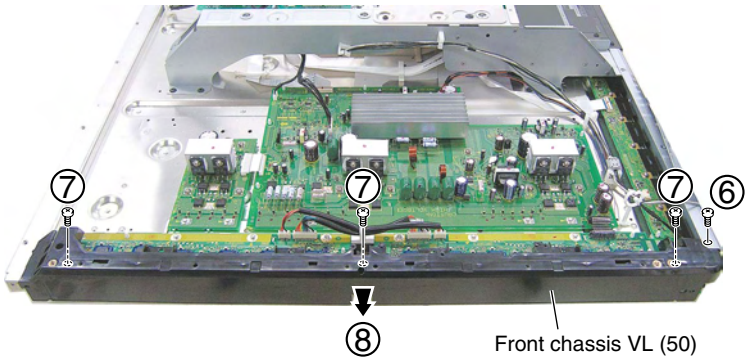
5 Exchange of SCAN IC

① Loosen the jumper wire.
② Remove the LED IR Assy by removing the one nyron rivet.
③ Remove the two screws.
④ Unhook the six hooks.
⑤ Remove the panel holders V1 (50) and V2 (50).

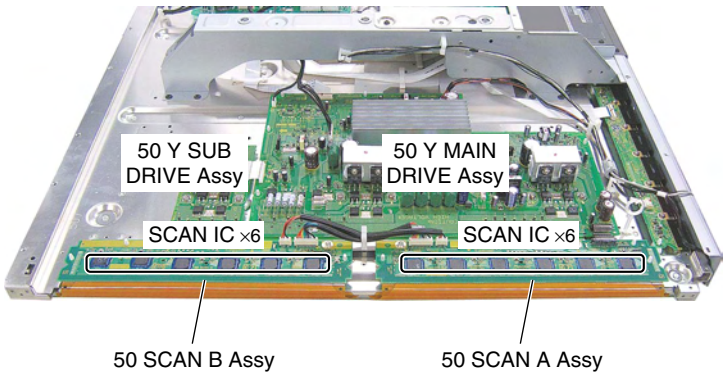




⑥ Remove the one screw.
⑦ Remove the three screws.
⑧ Remove the front chassis VL (50).



Exchange



7. ADJUSTMENT

7.1 PARTS CHANGE OF NOTES

1. At shipment, the unit is adjusted to its best conditions. Normally, it is not necessary to readjust even if an assembly is replaced. If the adjustment is shifted or if it becomes necessary to readjust because of part replacement, etc., perform the adjustment as described below.
2. Any value changed in Service/Factory mode will be stored in memory as soon as it is changed. Before readjustment, take note of the original values for reference in case you need to restore the original settings.
3. Use a stable AC power supply.

7.2 ADJUSTMENT REQUIRED WHEN THE SET IS REPAIRED OR REPLACED

■ When any of the following assemblies is replaced

POWER SUPPLY Unit	➡	Refer to "7.7 HOW TO CLEAR HISTORY DATA" and "7.8 PROCEDURE WHEN REPLACING THE POWER SUPPLY UNIT".
50 DIGITAL Assy	➡	Writing of backup data is required. Refer to the "7.4 BACKUP WHEN THE PANEL UNIT IS ADJUSTED. "
50X MAIN DRIVE Assy	➡	No adjustment required
50X SUB DRIVE Assy	➡	No adjustment required
50Y MAIN DRIVE Assy	➡	No adjustment required
50Y SUB DRIVE Assy	➡	No adjustment required
Service Panel Assy	➡	Refer to "7.5.1 ADJUSTMENTS WHEN THE SERVICE PANEL ASSY IS REPLACED" and "7.7 HOW TO CLEAR HISTORY DATA".
MAIN Assy (*)	➡	No adjustment required
SENSOR Assy	➡	Writing of backup data is required. Refer to the "7.4 BACKUP WHEN THE PANEL UNIT IS ADJUSTED. "
TANSHI Assy	➡	No adjustment required

Note: Checking the Cable Card ID

The PDP has a slot for a cable card that is used for managing your information by the cable TV company. The following procedure allows you to check your Cable Card ID and the Host ID.

1. Press HOME MENU.
2. Select “Tuner Setup”. (↑/↓ then ENTER)
3. Select “Channel Setup”. (←/→ then ENTER)
4. Select “POD ID”. (↑/↓)
   • The Host ID and Cable Card ID appear.
5. Press HOME MENU to exit the menu.

(*) : When replacing the MAIN Assy, be sure to do the FINAL SETUP.

7.3 ADJUSTMENT REQUIRED WHEN PART IS REPLACED

Notes on replacing parts

For the parts described in the list below, replacement is required for the whole Assy, not only the defective part.
If any part listed below is identified as defective and needs replacement, replace the whole Assy, and make necessary adjustments after replacement.

Reason: The whole Assy must be replaced, because adjustments and data rewriting for the Assy at the level of production line are required.

PCB Assy No.	Function Name	Parts that Require Whole-Assy Replacement		
		Ref No.	Function Name	Part No.
AWW1139	50 DIGITAL Assy	IC3151	Module microcomputer	AGC1011
		IC3401	Sequence IC	PEG239A
		IC3301	Flash memory	AGC1009
		IC3156	EEPROM	BR24L04FJ-W
AWW1140	SENSOR Assy	IC3652	EEPROM	BR24L02FJ-W
AWV2312	MAIN Assy	IC4701	AV switch	R2S11002AFT
		IC4901	RGB switch	R2S11001FT
		IC5101	Main VDEC	UPD64015GM-UEU
		IC5301	A/D converter	AD9985KSTZ-110
		IC6201	System IC	BCM3517KQLGB0
		IC6602	DDR-SDRAM	EDD2516AKTA-6B
		IC6603	DDR-SDRAM	EDD2516AKTA-6B
		IC6604	DDR-SDRAM	EDD2516AKTA-6B
		IC6605	DDR-SDRAM	EDD2516AKTA-6B
		IC6902	NOR Flash	AGC1008
		IC8202	Flash ROM	AGC1007
		IC8402	Flash ROM	AGC1006

POWER SUPPLY Unit	The assembly must be replaced as a unit, and no part replacement is allowed.
MAIN Assy (*)	No adjustment is required after replacement of parts other than those mentioned above.
50 DIGITAL Assy	No adjustment is required after replacement of parts other than those mentioned above.
50X MAIN DRIVE Assy	No adjustment is required after replacement of parts other than those shown in "7.6 ADJUSTMENTS WHEN THE DRIVE ASSYS ARE REPLACED".
50X SUB DRIVE Assy	No adjustment required
50Y MAIN DRIVE Assy	No adjustment is required after replacement of parts other than those shown in "7.6 ADJUSTMENTS WHEN THE DRIVE ASSYS ARE REPLACED".
50Y SUB DRIVE Assy	No adjustment required
50 ADDRESS Assy	No adjustment required
SENSOR Assy	No adjustment is required after replacement of parts other than those mentioned above.
TANSHI Assy	No adjustment required

(*) : When replacing the MAIN Assy, be sure to do the FINAL SETUP.

7.4 BACKUP WHEN THE PANEL UNIT IS ADJUSTED

■ Outline

Adjustment data are stored in the EEPROM (IC3156/4K) on the DIGITAL Assy in the production process. Those adjustment data are also automatically stored in the EEPROM (for backup: IC3652) on the SENSOR Assy.
If the DIGITAL Assy is replaced, those adjustment data for backup can be copied from the EEPROM on the SENSOR Assy to a new DIGITAL Assy.

■ Backed up data

- Drive voltage adjustment value
- Hour-meter count
- Pulse-meter count
- Panel white balance adjustment value
- Serial No.
- Drive waveform adjustment value
- P-ON counter value
- PD/SD histories

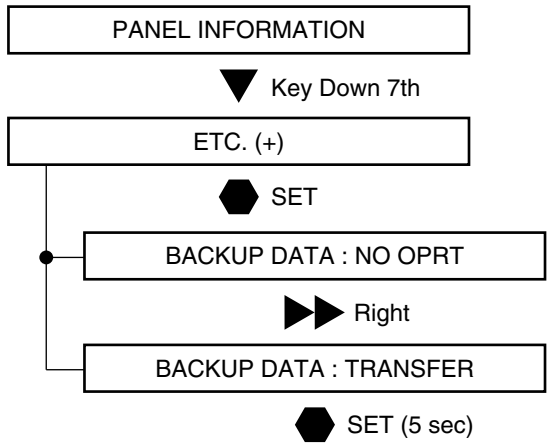
■ How to copy backup data

1. When the DIGITAL Assy is replaced with one for service (usual service)

Adjustment data can be restored by copying the data backed up in the SENSOR Assy to the EEPROM on a new DIGITAL Assy.
The EEPROM on the new DIGITAL Assy has no adjustment data, and the EEPROM for backup in the SENSOR Assy has adjustment data. After replacing the DIGITAL Assy, enter PANEL FACT. mode, display the PANEL INFORMATION page, then check if "NO DATA!" is set for "DIG. EEP" and "ADJUSTED" is set for "BACKUP". Then, proceed in the following steps:

(1) Copying, using the Factory menu

① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.
② Turn on the power, using the remote control unit, then enter Panel Factory mode.
Copy the backup data, as shown in the figure below.



③ Turn the power off.

- After the DIGITAL Assy is replaced with one for service, be sure to check if "NO DATA!" is set for "DIG. EEP" on the PANEL INFORMATION page of the PANEL FACT. mode.
- If copying of the backup data fails in the above procedure, the red LED lights, and the blue LED flashes, as a warning that no backup data were copied.
- If both the DIGITAL and SENSOR Assys are to be replaced, first replace the SENSOR Assy, turn the unit on and back off again, then replace the DIGITAL Assy.

(2) Copying, using the RS-232C commands

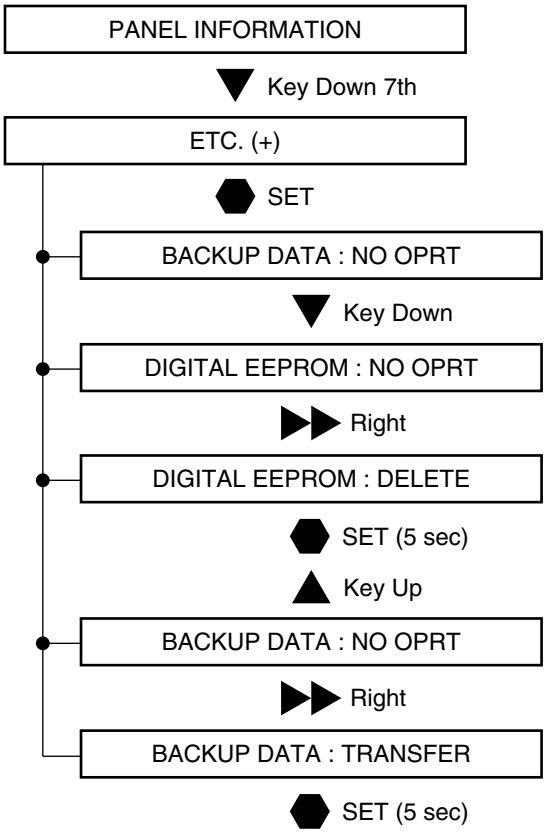
① Switch the RS-232C/SR+ setting to RS-232C so that RS-232C commands can be received.
② Turn on the unit, using the remote control unit or by issuing the PON command. Then issue the FAY command.
③ Issue the BCP command to transfer the data stored in the EEPROM for backup.
④ Turn the power off.

2. When a secondhand DIGITAL Assy that had been mounted in another product is to be reused

As adjustment data for another product are already stored in the secondhand DIGITAL Assy, first delete those data then copy the backup data stored in the EEPROM on the SENSOR Assy.

(1) Copying, using the Factory menu

① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.
② Turn on the power, using the remote control unit, then enter Panel Factory mode.
Copy the backup data, as shown in the figure below.



③ Turn the power off.

Note:

If the secondhand DIGITAL Assy is mounted in the product then the unit is turned on then back off again, the data in the EEPROM on the DIGITAL Assy are copied over the EEPROM in the SENSOR Assy. Thus the backup data can never be restored. During the first power-on after the DIGITAL Assy is replaced, be sure to enter Factory mode to copy the backup data. Or, before removing the secondhand DIGITAL Assy from the original product, delete the adjustment data on it, using the Factory mode (DIGITAL EEPROM: DELETE), mount it to the product to be repaired, then copy the data from the backup EEPROM.

(2) Copying, using the RS-232C commands

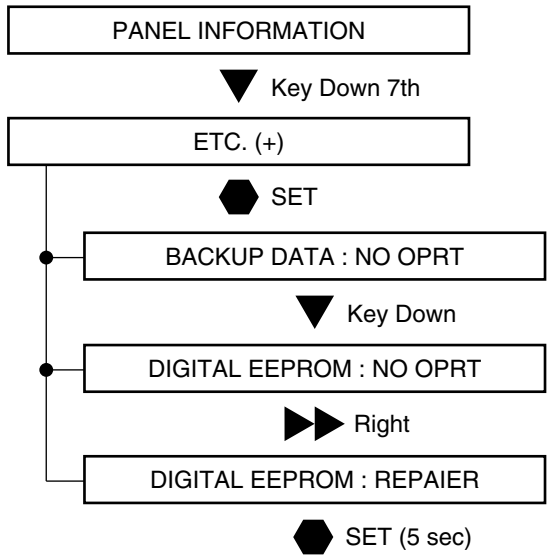
① Switch the RS-232C/SR+ setting to RS-232C so that RS-232C commands can be received.
② Turn on the unit, using the remote control unit or by issuing the PON command. Then issue the FAY command.
③ Issue the UAJ command to delete data stored in the EEPROM on the DIGITAL Assy.
④ Issue the BCP command to transfer the data stored in the EEPROM for backup.
⑤ Turn the power off.

3. In a case where normal backup data are not stored in the backup EEPROM because the EEPROM on the DIGITAL Assy is defective, etc., and where manually adjusted values are to be applied to the product

Note: In this section, it is assumed that settings for various items have been completed, using Factory menu or RS-232C commands.

(1) Method using the Factory menu

① Set various setting/adjustment values.
② Proceed in the following steps.



③ Turn the power off.

Note:
When a DIGITAL Assy with an EEPROM in which adjustment data are stored is mounted, this step is not required after manual adjustment. ("DIGITAL EEPROM: REPAIR" is not indicated.)

(2) Method using the RS-232C commands

Issue the FAJ command.

7.5 EXCHANGE OF SERVICE PANEL ASSY

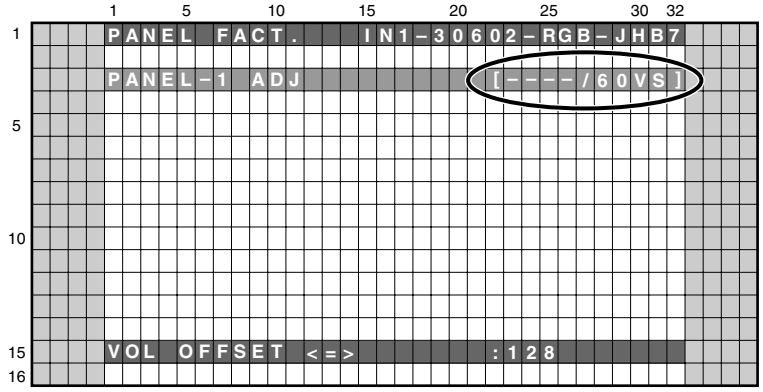
7.5.1 ADJUSTMENTS WHEN THE SERVICE PANEL ASSY IS REPLACED

■ Flowchart for panel replacement

After replacing the panel with one for service, readjustment of the Vofs voltage margin is required.

[Preparations]

- Basically, the Panel Factory menu is used for the voltage margin adjustment.
- The 60-Hz video sequence is used as the drive sequence.
- While adjusting the voltage margin using the Panel Factory menu, the current drive sequence is indicated on the screen, as shown below. Make sure that "60VS" is always indicated during adjustment.



Example of the OSD while the Panel Factory menu is displayed

[Supplement]

- When the raster mask for margin adjustment is displayed during Panel Factory mode, the Panel White Balance is set to default, and the Panel Gamma is set to Straight in the "PANEL-1 ADJ" layer.
  On the third line, the OSD reads "- - - - /****" (**** stands for the type of the drive sequence set).

- If you perform adjustment using RS-232C commands, use the commands shown below.
  These commands are different from those used during Factory Menu mode.

  PAV S00 : Used to set the Panel Drive mode to Factory.
  VFQ S03 : Used to set the Drive Sequence to Video 60 Hz.
  WBI S01 : Used to temporarily set the adjustment value of the Panel WB to default. (To return the value to its original value, use WBI S00.)
  PGM S00 : Used to set the gamma setting to Factory.

Note: If the power is shut off in the process of the adjustment procedures, send the above commands again.

OUTLINE

Mode switching

Switch modes to start the voltage adjustment, as follows:

Enter Factory mode.
Display RST MASK 01 (white).

FAY
MKS S51

Voltage setting

Set Vsus and Vyprst, and tentatively set Vofs:

VOL SUS : Set to 137 (205[V]).
VOL RST P : Set to the voltage indicated on the panel label.
VOL OFFSET : Tentatively set to the voltage indicated on the panel label.

VSU137
VRP***
VOF***

Aging

Perform aging with the fully white screen for 30 minutes

To prevent an error caused by the temperature characteristics and to let the unit show its full properties after letting it sit, perform aging for 30 minutes to raise the panel temperature to a certain extent. This ensures the accuracy of inspection and adjustment.

Actual Vofs adjustment (② to ④)

Measuring the upper limit of Vofs

Signals to be measured: red 760, red 1023+, green 1023, and blue 1023

Vofs setting

In a case where the upper limit of Vofs is less than 49:
Vofs set voltage = Upper limit value of Vofs - 9 [V]

In a case where the upper limit of Vofs is 49 or more:
Vofs set voltage = 40 [V]

CA check with black

With the black mask displayed, check if there are stationary or horizontally moving lit cells.

Confirmation of settings

Check that each voltage value is correctly set.

Command transfer

After the voltage adjustment is finished, make the following settings:

Mask: OFF, Factory: OUT

CA check

Check that the picture is properly displayed.

Use DVD, LD, and broadcast signals for checking.

Ranges of the adjustable voltages
(Ranges of the adjustable voltage when the upper and lower limits of each voltage are to be checked in this flowchart)

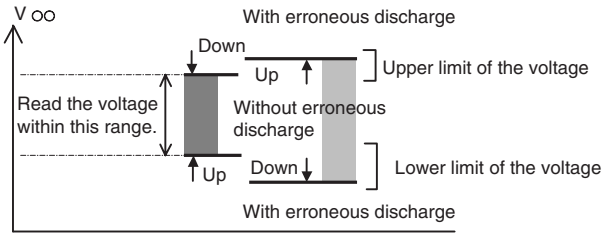
Vsus = 205 [137] [V]
Vofs = 15 [005] to 60 [246] [V]
Vyprst = 250 [013] to 300 [128] [V]
Vxnrst = 180 [V]
Vh = 130 [V]
Vadr = 60 [V]

Ranges of the voltage settings
(Ranges of voltage settings for this unit)

Vsus = 205 [137] [V]
Vofs = 28 [075] to 48 [182] [V]
Vyprst = 260 [036] to 300 [128] [V]
Vxnrst = 170 [V]
Vh = 130 [V]
Vadr = 60 [V]

When calculating the voltage, **round off the fractional part**.
(For circuit protection, it is desirable to set the voltage to a lower value.)

For margin measuring, be sure to read the value within the hysteresis (stricter value).



The Definition of Abnormal Cells
Abnormal bright cells: Within five cells on screen.
(fewer than 2 cells within a radius of 1 cm)

Abnormal dark cells: Under fifteen cells on screen.
(fewer than 2 cells within a radius of 1 cm)

Count abnormal cells at a distance of 1 m from panel.
If abnormal cells won't occur longer than one second, do not count the abnormal cells.
Do not count still dark cells and bright cells.

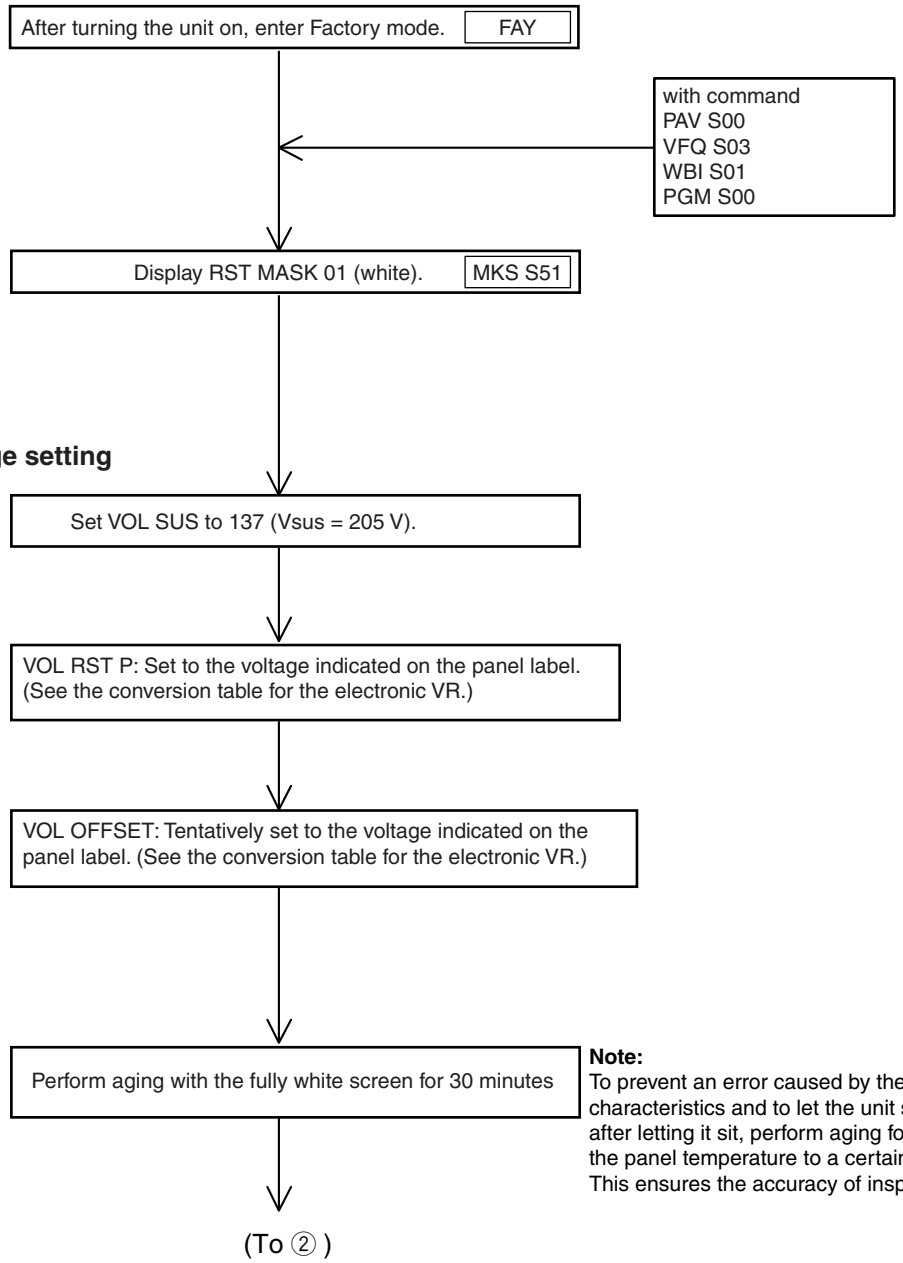
Standard settings of the unit at shipment:

Vsus setting = 205 [137] [V]
Vsus margin = 17 [V] or more
Vofs setting = 28 [075] to 48 [182] [V]
Vofs margin = 19 [V] or more
Vyprst setting = 260 [036] to 300 [128] [V]

Note: The voltages in the flowcharts are given in absolute values (without ±).

① Preparations

Initial setting



Voltage setting

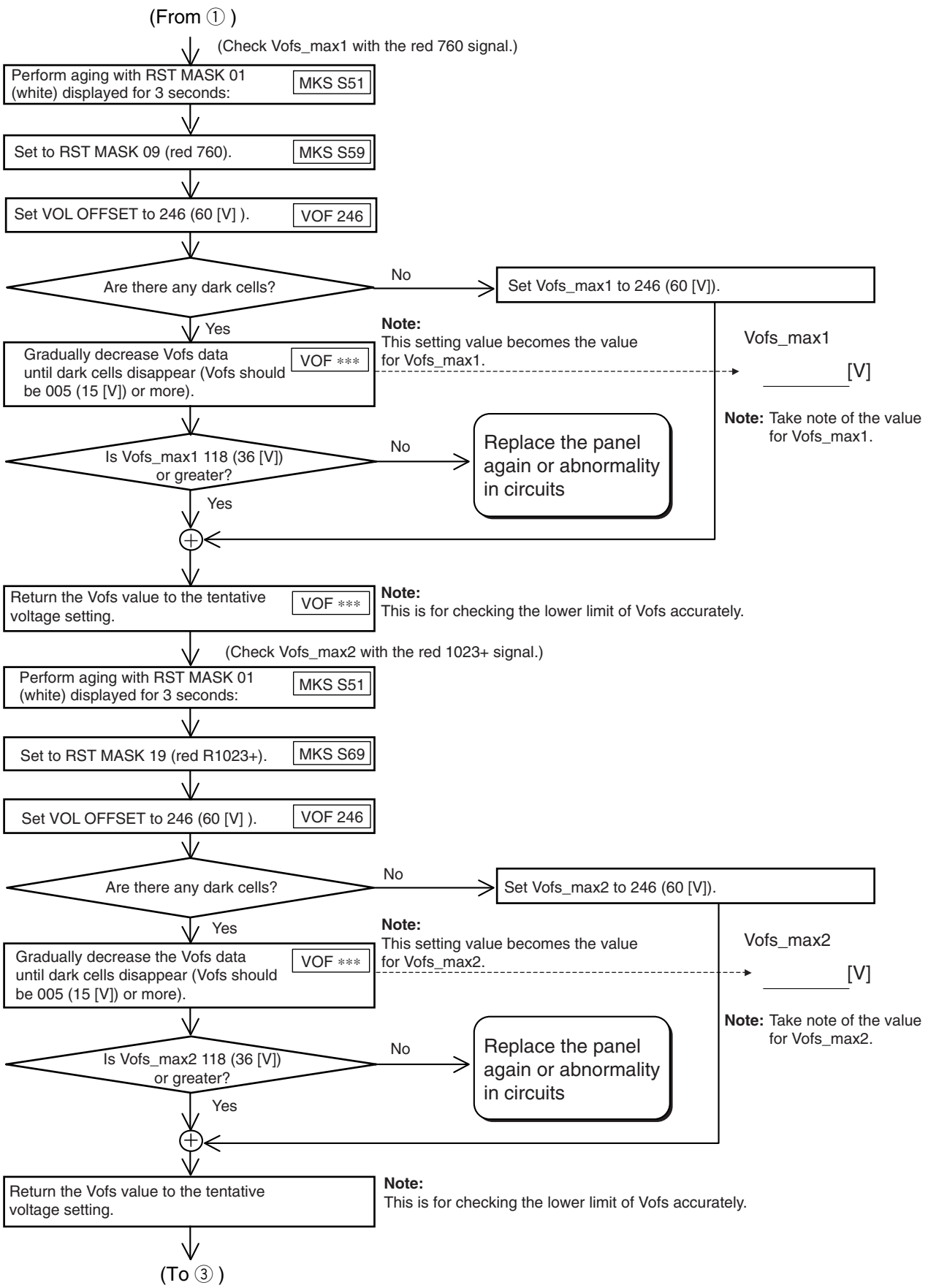
Set VOL SUS to 137 (Vsus = 205 V).
VOL RST P: Set to the voltage indicated on the panel label.
(See the conversion table for the electronic VR.)
VOL OFFSET: Tentatively set to the voltage indicated on the
panel label. (See the conversion table for the electronic VR.)

Aging

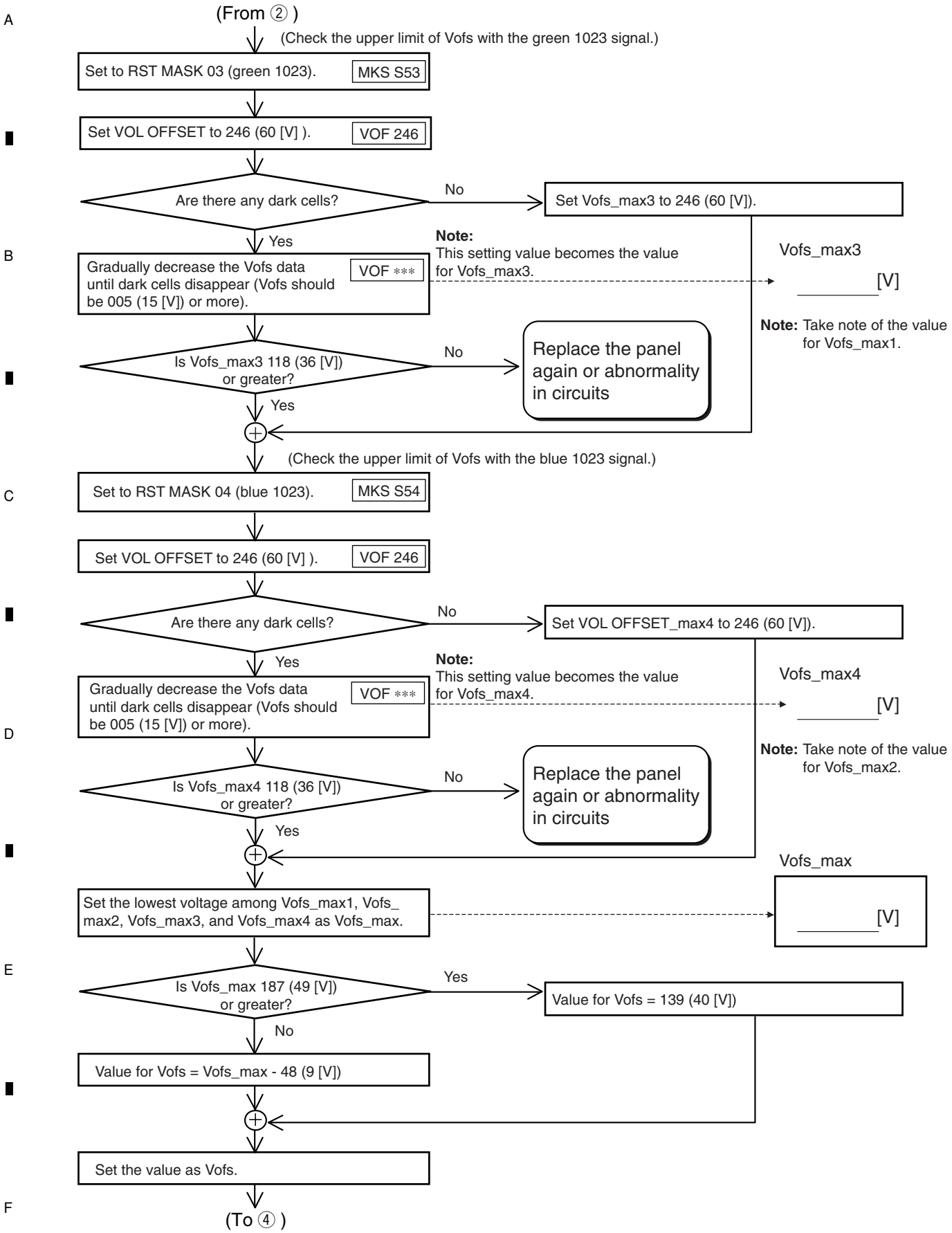
Note:
To prevent an error caused by the temperature characteristics and to let the unit show its full properties after letting it sit, perform aging for 30 minutes to raise the panel temperature to a certain extent.
This ensures the accuracy of inspection and adjustment.

(To ②)

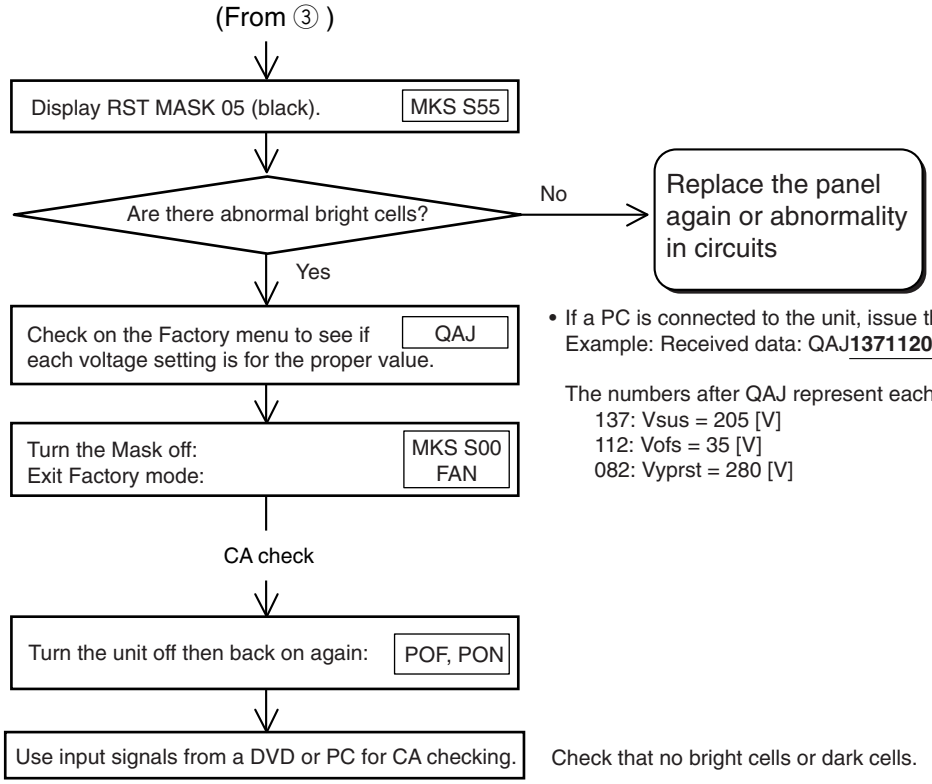
② Actual Vofs adjustment (1)


(From ①)
(Check Vofs_max1 with the red 760 signal.)
Perform aging with RST MASK 01 (white) displayed for 3 seconds:
MKS S51
Set to RST MASK 09 (red 760).
MKS S59
Set VOL OFFSET to 246 (60 [V]).
VOF 246
Are there any dark cells?
No
Set Vofs_max1 to 246 (60 [V]).
Yes
Note:
This setting value becomes the value for Vofs_max1.
Gradually decrease Vofs data until dark cells disappear (Vofs should be 005 (15 [V]) or more).
VOF ***
Vofs_max1
[V]
Note: Take note of the value for Vofs_max1.
Is Vofs_max1 118 (36 [V]) or greater?
No
Replace the panel again or abnormality in circuits
Yes
Return the Vofs value to the tentative voltage setting.
VOF ***
Note:
This is for checking the lower limit of Vofs accurately.
(Check Vofs_max2 with the red 1023+ signal.)
Perform aging with RST MASK 01 (white) displayed for 3 seconds:
MKS S51
Set to RST MASK 19 (red R1023+).
MKS S69
Set VOL OFFSET to 246 (60 [V]).
VOF 246
Are there any dark cells?
No
Set Vofs_max2 to 246 (60 [V]).
Yes
Note:
This setting value becomes the value for Vofs_max2.
Gradually decrease the Vofs data until dark cells disappear (Vofs should be 005 (15 [V]) or more).
VOF ***
Vofs_max2
[V]
Note: Take note of the value for Vofs_max2.
Is Vofs_max2 118 (36 [V]) or greater?
No
Replace the panel again or abnormality in circuits
Yes
Return the Vofs value to the tentative voltage setting.
Note:
This is for checking the lower limit of Vofs accurately.
(To ③)

③ Actual Vofs adjustment (2)


(From ②)
(Check the upper limit of Vofs with the green 1023 signal.)
Set to RST MASK 03 (green 1023).
MKS S53
Set VOL OFFSET to 246 (60 [V]).
VOF 246
Are there any dark cells?
No
Set Vofs_max3 to 246 (60 [V]).
Yes
Note:
This setting value becomes the value for Vofs_max3.
Gradually decrease the Vofs data until dark cells disappear (Vofs should be 005 (15 [V]) or more).
VOF ***
Vofs_max3
[V]
Note: Take note of the value for Vofs_max1.
Is Vofs_max3 118 (36 [V]) or greater?
No
Replace the panel again or abnormality in circuits
Yes
(Check the upper limit of Vofs with the blue 1023 signal.)
Set to RST MASK 04 (blue 1023).
MKS S54
Set VOL OFFSET to 246 (60 [V]).
VOF 246
Are there any dark cells?
No
Set VOL OFFSET_max4 to 246 (60 [V]).
Yes
Note:
This setting value becomes the value for Vofs_max4.
Gradually decrease the Vofs data until dark cells disappear (Vofs should be 005 (15 [V]) or more).
VOF ***
Vofs_max4
[V]
Note: Take note of the value for Vofs_max2.
Is Vofs_max4 118 (36 [V]) or greater?
No
Replace the panel again or abnormality in circuits
Yes
Vofs_max
Set the lowest voltage among Vofs_max1, Vofs_max2, Vofs_max3, and Vofs_max4 as Vofs_max.
[V]
Is Vofs_max 187 (49 [V]) or greater?
Yes
Value for Vofs = 139 (40 [V])
No
Value for Vofs = Vofs_max - 48 (9 [V])
Set the value as Vofs.
(To ④)

④ Actual Vofs adjustment (3)


(From ③)
Display RST MASK 05 (black).
MKS S55
Are there abnormal bright cells?
No
Replace the panel again or abnormality in circuits
Yes
Check on the Factory menu to see if each voltage setting is for the proper value.
QAJ
Turn the Mask off:
Exit Factory mode:
MKS S00
FAN
CA check
Turn the unit off then back on again:
POF, PON
Use input signals from a DVD or PC for CA checking.

- If a PC is connected to the unit, issue the QAJ command to check each voltage.
  Example: Received data: QAJ**137112082**128128128128128304D

  The numbers after QAJ represent each voltage after adjustment, as follows:
  137: Vsus = 205 [V]
  112: Vofs = 35 [V]
  082: Vyprst = 280 [V]

Check that no bright cells or dark cells.

■ Conversion charts for electronic VRs (Vprst/Vofs)

Vprst [V]	Setting value [STEP]
250	013
251	015
252	018
253	020
254	022
255	024
256	027
257	029
258	031
259	034
260	036
261	038
262	040
263	043
264	045
265	047
266	050
267	052
268	054
269	056
270	059
271	061
272	063
273	066
274	068
275	070
276	073
277	075
278	077
279	079
280	082
281	084
282	086
283	089
284	091
285	093
286	096
287	098
288	100
289	102
290	105
291	107
292	109
293	112
294	114
295	116
296	119
297	121
298	123
299	126
300	128

Vofs [V]	Setting value [STEP]
15	005
16	011
17	016
18	021
19	027
20	032
21	037
22	043
23	048
24	054
25	059
26	064
27	070
28	075
29	080
30	086
31	091
32	096
33	101
34	107
35	112
36	118
37	123
38	128
39	134
40	139
41	144
42	150
43	155
44	160
45	166
46	171
47	176
48	182
49	187
50	192
51	198
52	203
53	208
54	214
55	219
56	224
57	230
58	235
59	240
60	246

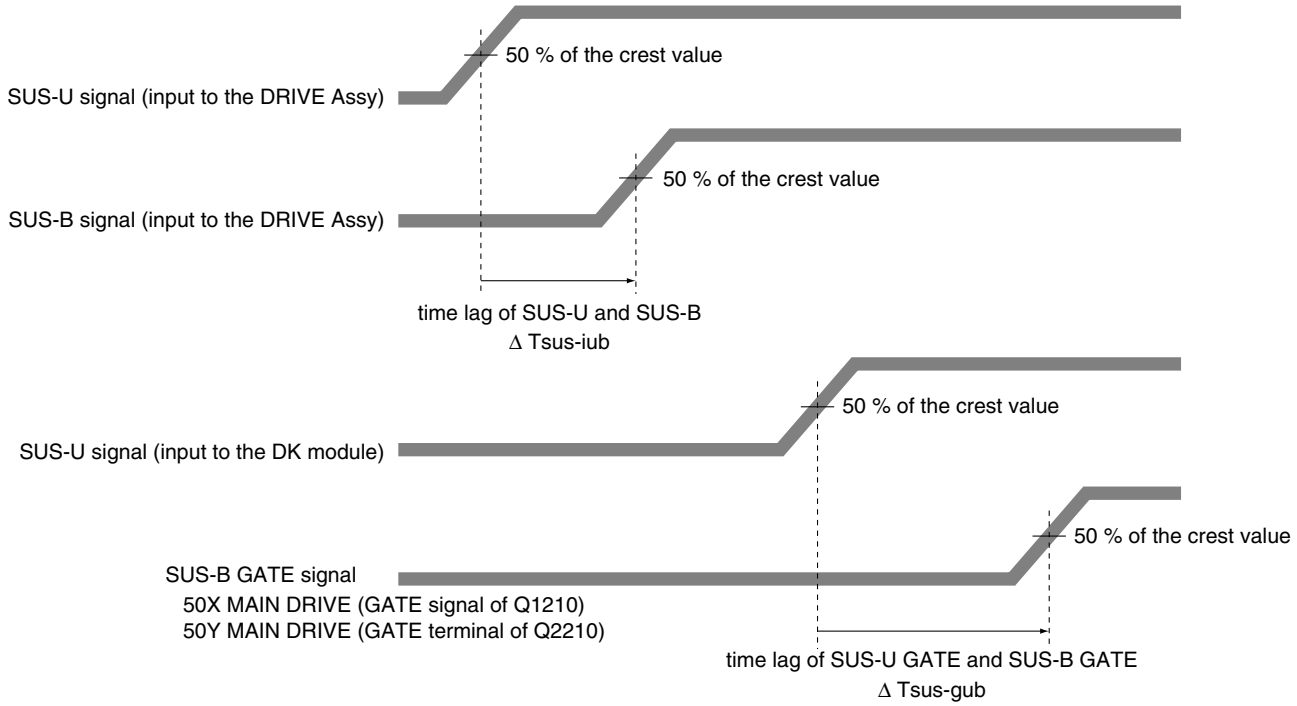
7.6 ADJUSTMENTS WHEN THE DRIVE ASSYS ARE REPLACED

■ Waveform adjustments required when replacing the following parts of the 50X MAIN DRIVE and 50Y MAIN DRIVE Assys.

Assy Name	Ref No.	Part Name	Part Category	Remarks
50X MAIN DRIVE Assy	IC1205	PS9117P	Photo Coupler	
	IC1204	TND307TD	FET Driver	
50Y MAIN DRIVE Assy	IC2104	TND307TD	FET Driver	
	IC2209	PS9117P	Photo Coupler	
	IC2208	TND307TD	FET Driver	

■ TIME LAG ADJUSTMENT OF THE CONTROL SIGNAL (SUS-B)

① Measure the time lag for the SUS-U signal to the SUS-B signal.
② Check the time lag for the SUS-B GATE signal to the SUS-U GATE siganl.
Adjust the variable control so that the time lag of GATE becomes " time lag of input signal + α ± 5 nsec."
Note: For details on measuring points of waveform, see the figure below.


50 % of the crest value
SUS-U signal (input to the DRIVE Assy)
50 % of the crest value
SUS-B signal (input to the DRIVE Assy)
time lag of SUS-U and SUS-B
Δ Tsus-iub
50 % of the crest value
SUS-U signal (input to the DK module)
50 % of the crest value
SUS-B GATE signal
50X MAIN DRIVE (GATE signal of Q1210)
50Y MAIN DRIVE (GATE terminal of Q2210)
time lag of SUS-U GATE and SUS-B GATE
Δ Tsus-gub

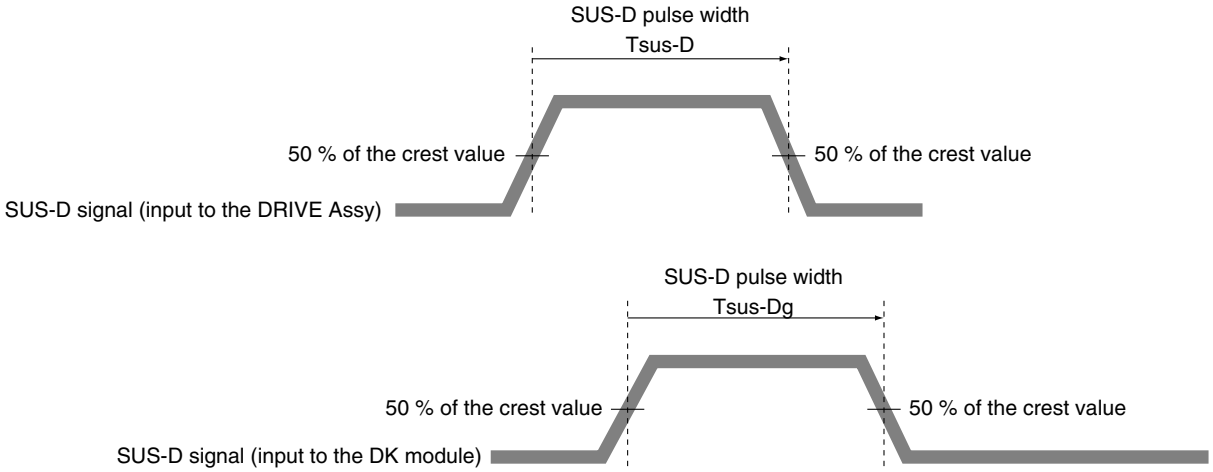
time lag of SUS-U gate and SUS-B gate : Δ Tsus-gub
Adjust so that "Δ Tsus-gub = Δ Tsus-iub + α ± 5 nsec," using the variable controls shown in the table below:

Assy	VR	Value of α
50X MAIN DRIVE ASSY	VR1001	70 nsec
50Y MAIN DRIVE ASSY	VR2001	50 nsec

DELAY ADJUSTMENT OF THE CONTROL SIGNAL (SUS-D)

① Measure the pulse width of the SUS-D signal.
② Check the pulse width of the SUS-D input signal for the DK module.
Adjust the variable control so that the pulse width of the SUS-D input signal for the DK module becomes the "pulse width of the SUS-D signal ± 5 nsec."

Note: For details on measuring points of waveform, see the figure below.

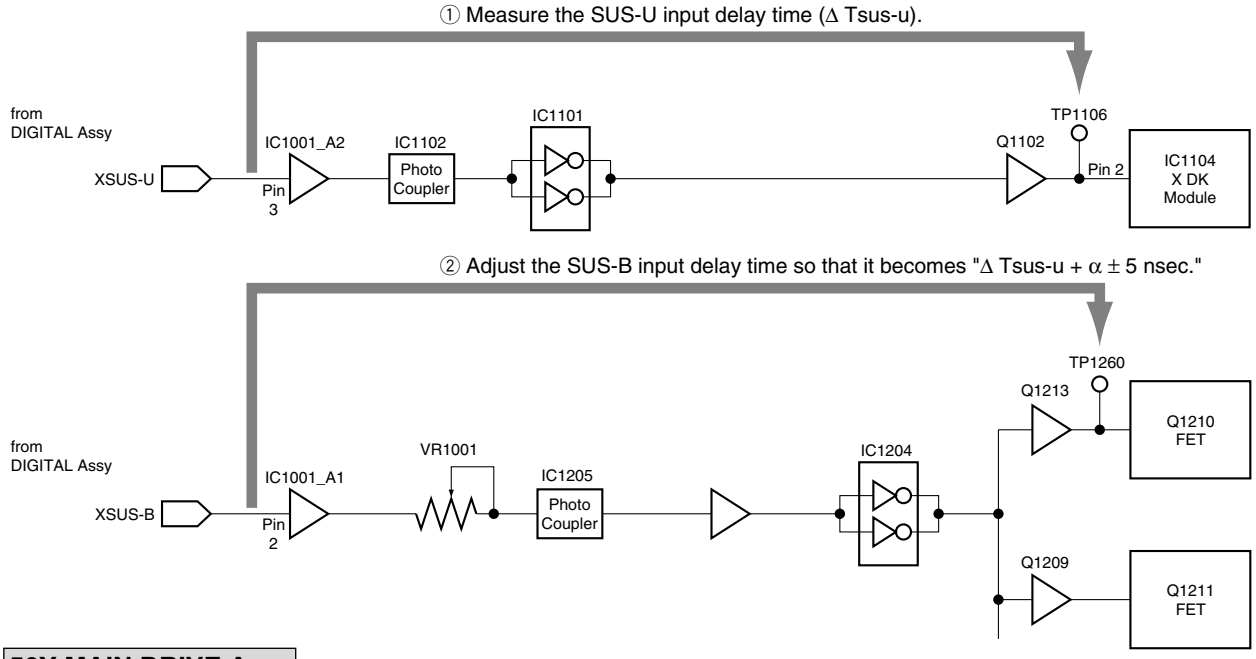

SUS-D pulse width
Tsus-D
50 % of the crest value
50 % of the crest value
SUS-D signal (input to the DRIVE Assy)
SUS-D pulse width
Tsus-Dg
50 % of the crest value
50 % of the crest value
SUS-D signal (input to the DK module)

SUS-D pulse width: Tsus-Dg
Adjust so that "Tsus-Dg = Tsus-D ± 5 nsec," using the variable control shown in the table below:

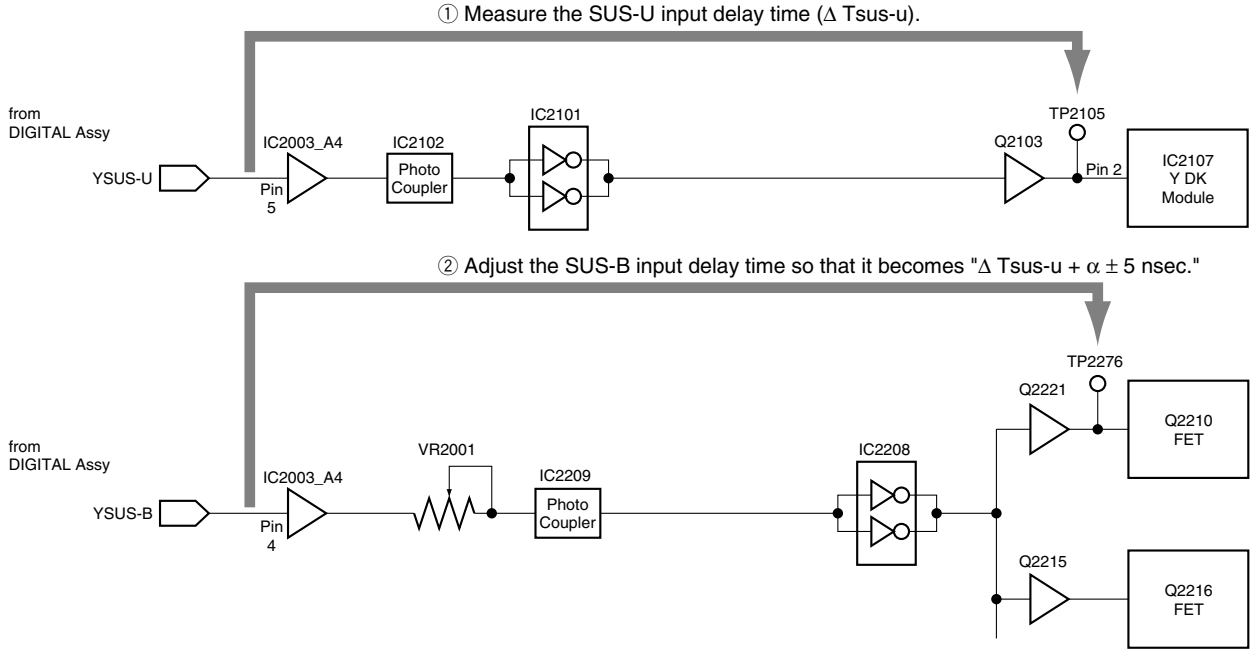
Assy	VR
Y MAIN DRIVE	VR2002

■ SUS-B ADJUSTMENT

50X MAIN DRIVE Assy



50Y MAIN DRIVE Assy



■ SUS-D ADJUSTMENT

50Y MAIN DRIVE Assy

① Measure the SUS-D pulse width (Tsus-D).
② Adjust the pulse width of the SUS-D input signal for the DK module so that it becomes "Tsus-D ± 5 nsec."
from DIGITAL Assy
YSUS-D
IC2002_A7
Pin 8
VR2002
IC2104
TP2107
Q2106
IC2107 Y DK Module

7.7 HOW TO CLEAR HISTORY DATA

■ Clearance of various logs after the Assys are replaced

Besides adjustment data, data on accumulated power-on time and logs on defective parts of the product are backed up. Some of those data must be cleared after the Assys are replaced for service.

(1) Clearance of logs, using the RS-232C commands

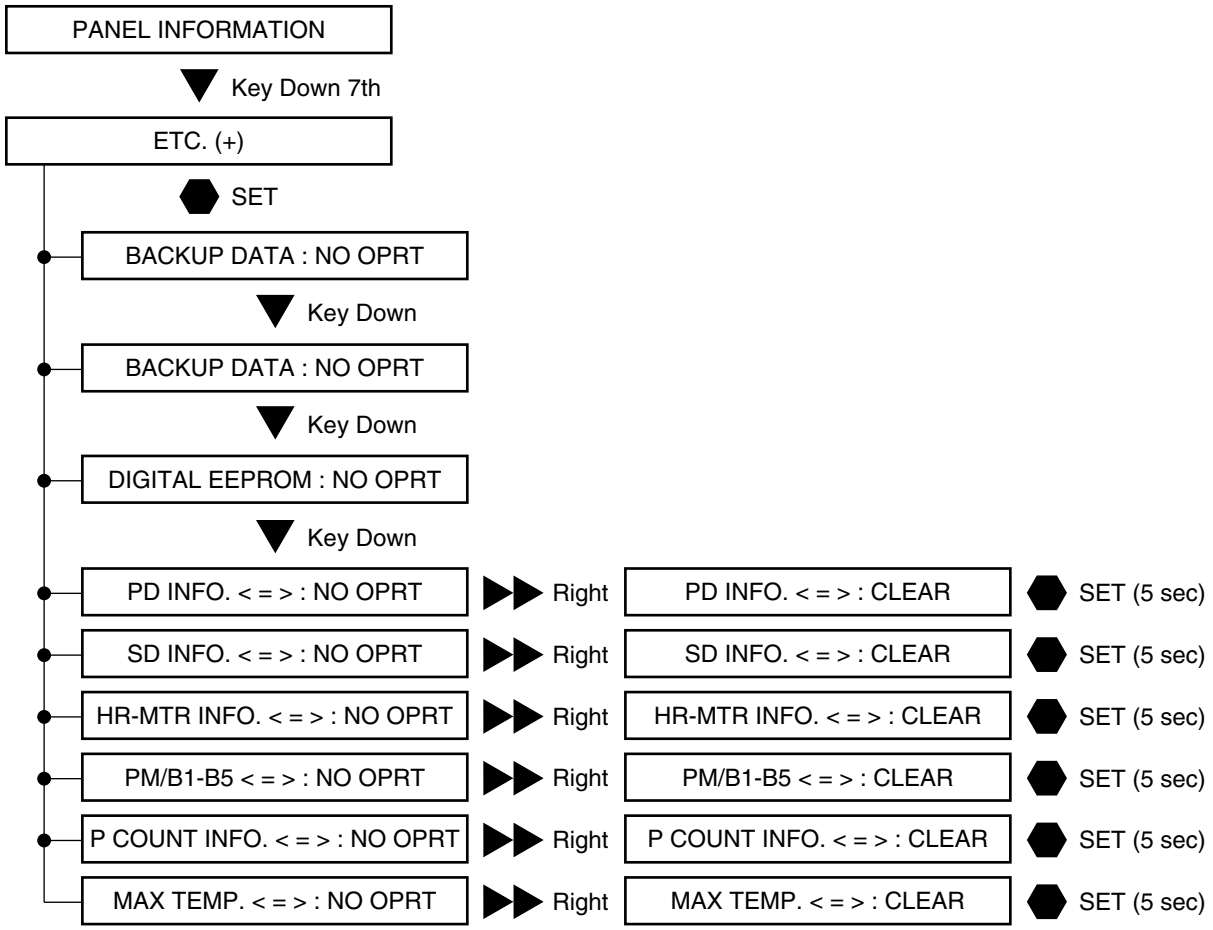
Item	Content	When the Panel is replaced	When the POWER SUPPLY Unit is replaced	When the Other parts is replaced	RS-232C Commands
Hour-meter	Accumulated power-on time	Must be cleared	No need to be cleared	No need to be cleared	CHM
Pulse-meter	Accumulated number of pulses emitted	Must be cleared (mandatory)	No need to be cleared	No need to be cleared	CPM
Shutdown history	Cause of an SD and hour-meter count	Must be cleared	No need to be cleared	No need to be cleared	CSD
Power-down history	Cause of an PD and hour-meter count	Must be cleared	No need to be cleared	No need to be cleared	CPD
Power-on counter	Relay-on count	No need to be cleared	Must be cleared (mandatory)	No need to be cleared	CPC
MAX TEMP	Historical max. temperature	Must be cleared	Must be cleared	Must be cleared	CMT

Notes:
- As the pulse-meter count is used for each correction function, it must be cleared when an Assy relevant to correction functions is replaced.
- When clearing logs, using the RS-232C commands, first enter Factory mode (by issuing FAY or PFY), then issue the corresponding command.

(2) Clearance of logs, using the Factory menu

① Plug in the AC cord, press the Power switch on the unit to set it to ON, then enter Standby mode.

② Turn on the power, using the remote control unit, then enter Panel Factory mode.
Delete various logs, as shown in the figure below.



③ Turn the power off.

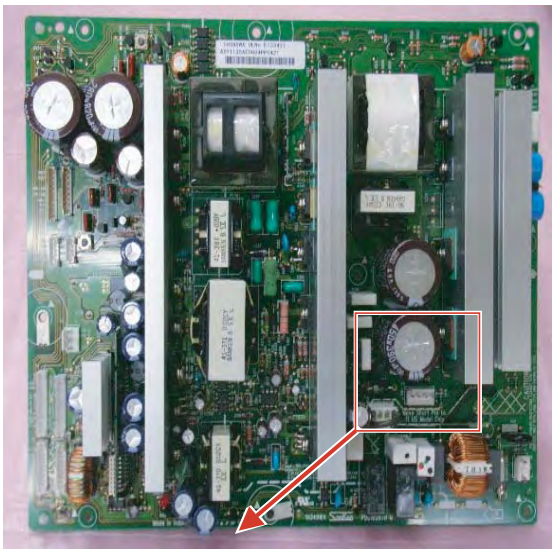
7.8 PROCEDURE WHEN REPLACING THE POWER SUPPLY UNIT

u

A

■ Procedure of Changing Jumper Connector after replacing the Power Supply Unit

When replacing the Power Supply Unit, it is necessary to perform the following connector changes.
Otherwise the unit cannot work properly and the unit may be damaged.
Therefore perform these connector settings without fail when replacing the Power Supply Unit. (before power on the unit)

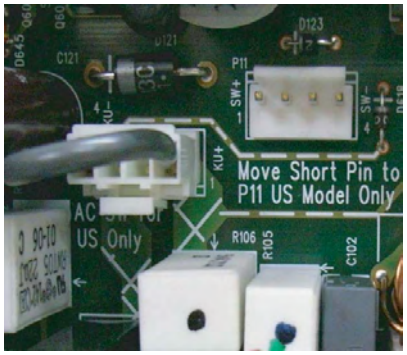


Location of the jumper connector

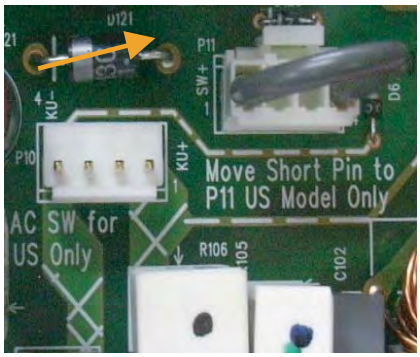
B

C

1. As for service parts, the Jumper connector is connected at connector P10.

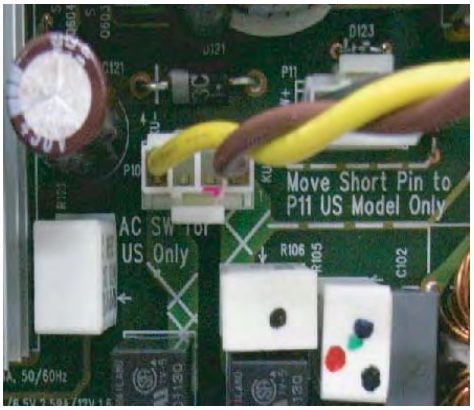


2. Remove the jumper connector from connector P10 and connect it to connector P11.



D

3. Connect the cable connector from power SW to P10.



E

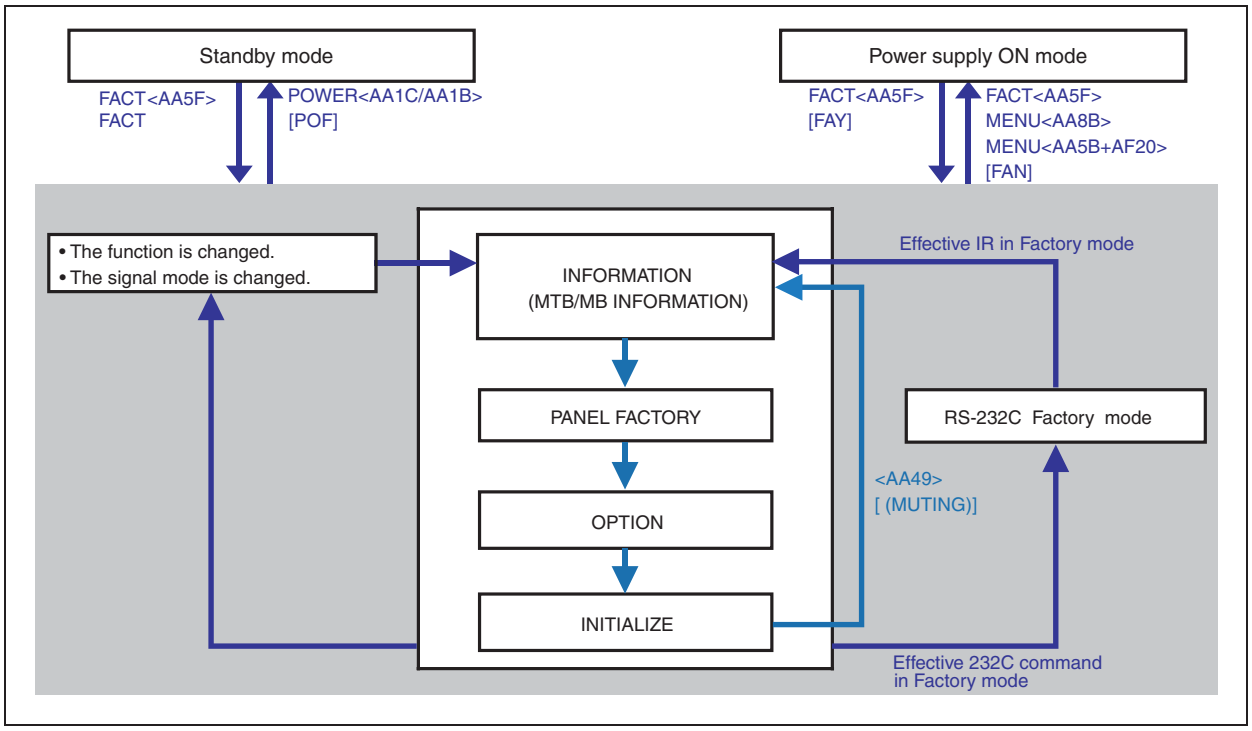
F

8. SERVICE FACTORY MODE

8.1 SERVICE FACTORY MODE OUTLINE

Operations during Service/Factory mode are described here.

8.1.1 TRANSITION DIAGRAM OF SERVICE FACTORY MODE



8.1.2 HOW TO ENTER/EXIT SERVICE FACTORY MODE

■ How to enter Service Factory Mode and do it go out.

■ How to enter Service Factory Mode.

Case operated by remote control)

- Service remote control : press[FACTORY1]key.

Case to RS-232C transmit command)

- Standby mode : Send [PON]+[FAY] .
- Power supply ON mode : Send[FAY] .

■ How to come off Service Factory Mode.

Case operated by remote control)

- Service remote control : press [FACTORY1] key.
- Remote control : press [HOME MENU] key.

Case to RS-232C transmit command)

- Send [FAN] .

8.1.3 OPERATION OF SERVICE FACTORY MODE

■ Functions whose setting are set to OFF.

The settings for the following functions are set to OFF when Service Factory mode is entered (Including when the “FAY” command is received) :

No.	Function	Remarks
1	Two screen operation	Input function set on the main side is selected.
2	FREEZE	
3	Mask control	MTB/MB is none. It becomes processing on the PANEL side.
4	ORBITER	Central value operation.
5	Detection of the TRAP switch	The detection operation is stopped.
6	TRAP history	To a possible turning on though the memory is maintained.
7	Display of TV guide	
8	Setting of Parental Control	When this is turned off, the block of the screen is released.

Note) Enter the factory after canceling ACI because the ACI operation setting OFF and not done.

■ User data

User data will be treated as follows :

- User data on picture- and audio-quality adjustments are not reflected, and factory-preset data are output (user data will be retained in memory). When the unit enters Service Factory mode, the current audio-quality adjustment data will be still be retained in memory.
- As to data on various settings, user data will be applied to the items that are associated with signal format change (screenize switching, etc).
- Data on screen (i.e.,screen position; meaning clock dividers, and not including data on screen size) Are reset to the default values (data stored in memory will be retained). Screen size will be retained.

8.1.4 REMOTE CONTROL CODE

■ Remote control codes in Service Factory mode.

SR/R Keys	Basic Functions	Remarks
Muting	Switching the main items	Shifting to the next main item (top).
↓(DOWN)	Switching the subtitled items.	Shifting downward to the next subtitiled item.
↑(UP)	Switching the subtitled items.	Shifting upward to the next upper layer.
←(LEFT)	Decreasing the adjustment value.	Decreasing the adjustment value.
→(RIGHT)	Increasing the adjustment value.	Increasing the adjustment value.
ENTER/SET	Switching the layers.	Shifting downward or upward to the next lower or upper layer.
INPUT	Selecting INPUT.	Shifting the INPUT to the next function.
INPUTxx	Selecting INPUT.	Switching the INPUT to xx. (xx=1-6 etc)
CH+/P+	Increasing the channel number.	Advanving.
CH-/P-	Decreasing the channel number.	
Numeric keys	Function: TV	Function: TV(previously selected channel number is selected).
POWER	Power OFF	Turning the power off.
FACTORY	Factory OFF(Factory mode) Factory ON(Non-Factory mode)	In Factory mode , turning Factory mode off. In Non-Factory mode , turning Factory mode on.
HOME MENU *1	Menu ON.	In Factory mode , turning Factory mode off, and Menu mode on.
VOLUME+	Volume UP.	Increasing 10 the adjustment value. (PANEL FACTORY)
VOLUME-	Volume DOWN.	Increasing 10 the adjustment value. (PANEL FACTORY)
DRIVE ON/OFF *2	Drive Mode OFF.	Turning Drive mode off.
INTEGRATOR *1	INTEGRATOR MENU ON	Enter INTEGRATOR MODE.

[Note] *1 : A pertinent key that exists in the service remote control, becomes effective only in the factory and integrator mode. Please use the remote control of the attachment when you normally operate it in the mode (home menu operation, etc.).

*2 : When ten seconds have passed since the [DRIVE ON/OFF] key was pressed at the standby, it becomes invalid. Please press [POWER] key from the [DRIVE ON/OFF] key pressing within ten seconds when you do power supply ON while driven OFF.

Remote Control Unit
for Servicing

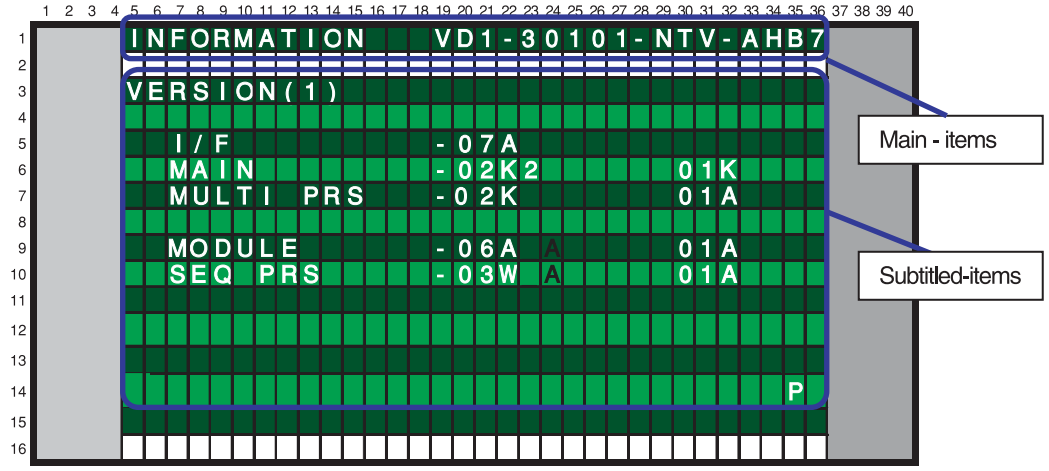
8.1.5 CONFIGURATION OF FACTORY MODE

■ Configulation of G7 Factory mode

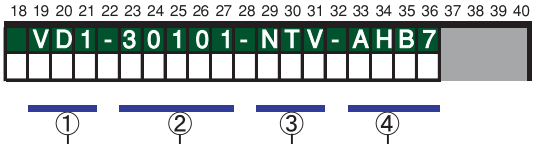
Main item / Submode Name	Submode item	Adjustable Range	Remarks
8.2.1 INFOMATION			
8.2.1.1 VERSION (1)			
8.2.1.2 VERSION (2)			
8.2.1.3 VERSION (3)			
8.2.1.4 MAIN NG	CLEAR <=>	NO<=>YES	
8.2.1.5 TEMPERATURE			
8.2.1.6 HOUR METER	MTB HOUR METER	NO<=>YES	
8.2.1.7 HDMI SIGNAL INFO 1			
8.2.1.8 HDMI SIGNAL INFO 2			
8.2.1.9 VDEC SIGNAL INFO			
8.2.1.10 DTV TUNING STATUS1			
8.2.1.11 DTV TUNING STATUS2			
8.2.1.12 DTV TUNING STATUS3			
8.2.1.13 DTV TV-GUIDE BER			for technical analysis
8.2.1.14 DEBUG INFO			for technical analysis
8.2.2 PANEL FACTORY (+)			
8.2.2.1 PANEL INFORMATION			
8.2.2.2 PANEL WORKS			
8.2.2.3 POWER DOWN			
8.2.2.4 SHUT DOWN			
8.2.2.5 PANEL-1 ADJ (+)			
	X-SUS B ⇔	120 to 136	
	Y-SUS B ⇔	120 to 136	Equivalent to YSB
	Y-SUSTAIL T1 ⇔	120 to 136	Equivalent to YTG
	Y-SUSTAIL T2 ⇔	120 to 136	Equivalent to YTB
	Y-SUSTAIL W ⇔	120 to 136	Equivalent to YTW
	XY-RST W1 ⇔	120 to 136	Equivalent to RSW
	XY-RST W2 ⇔	120 to 136	Equivalent to RYW
	VOL SUS ⇔	000 to 255	Equivalent to VSU
	VOL OFFSET ⇔	000 to 255	Equivalent to VOF
	VOL RST P ⇔	000 to 255	Equivalent to VRP
	SUS FREQ. ⇔	MODE1-MODE8	Equivalent to SFR
8.2.2.6 PANEL-2 ADJ (+)			
	R-HIGH ⇔	000 to 511	Equivalent to PRH
	G-HIGH ⇔	000 to 511	Equivalent to PGH
	B-HIGH ⇔	000 to 511	Equivalent to PBH
	R-LOW ⇔	000 to 999	Equivalent to PRL
	G-LOW ⇔	000 to 999	Equivalent to PGL
	B-LOW ⇔	000 to 999	Equivalent to PBL
	ABL ⇔	000 to 255	Equivalent to ABL
8.2.2.7 PANEL REVISE (+)			
	R-LEVEL ⇔	LV-0 to LV-7	Equivalent to RRL
	G-LEVEL ⇔	LV-0 to LV-7	Equivalent to RGL
	B-LEVEL ⇔	LV-0 to LV-7	Equivalent to RBL
8.2.2.8 ETC (+)			
	BACKUP DATA ⇔	NO OPRT ⇔ TRANSFER or ERR	Equivalent to BCP
	DIGITAL EEPROM ⇔	NO OPRT ⇔ DELETE/REPAIR	Equivalent to FAJ/UAJ
	PD INFO. <=>	NO OPRT ⇔ CLEAR	Equivalent to CPD
	SD INFO. <=>	NO OPRT ⇔ CLEAR	Equivalent to CSD
	HR-MTR INFO. ⇔	NO OPRT ⇔ CLEAR	Equivalent to CHM
	PM/B1-B5 <=>	NO OPRT ⇔ CLEAR	Equivalent to CPM
	P COUNT INFO. ⇔	NO OPRT ⇔ CLEAR	Equivalent to CPC
	MAX TEMP. ⇔	NO OPRT ⇔ CLEAR	Equivalent to CMT
8.2.2.9 RASTER MASK SETUP (+)			
	MASK OFF		Equivalent to MKS+S00
	RST MASK 01 ⇔	⇔ 48V ⇔ 50V ⇔ 60V ⇔	Equivalent to MKS+S51
	• • •	60P ⇔ 70P ⇔ 72V ⇔ 75V ⇔	• • •
	RST MASK 24 ⇔		Equivalent to MKS+S74
8.2.2.10 PATTEN MASK SETUP (+)			
	MASK OFF		Equivalent to MKS+S00
	PTN MASK 01 ⇔	⇔ 48V ⇔ 50V ⇔ 60V ⇔	Equivalent to MKS+S01
	• • •	60P ⇔ 70P ⇔ 72V ⇔ 75V ⇔	• • •
	PTN MASK 39 ⇔		Equivalent to MKS+S39
8.2.2.11 COMBI MASK SETUP (+)			
	MASK OFF		Equivalent to MKC+S00
	CMB MASK 01 ⇔	⇔ 48V ⇔ 50V ⇔ 60V ⇔	Equivalent to MKC+S01
	CMB MASK 10 ⇔	60P ⇔ 70P ⇔ 72V ⇔ 75V ⇔	• • •
			Equivalent to MKC+S10
8.2.3 OPTION			
8.2.3.1 EDID WRITE MODE ⇔		OFF ⇔ ON	for production line
8.2.3.2 ANTENNA MODE ⇔		CABLE ⇔ AIR	for production line
8.2.3.3 AFT ⇔		OFF ⇔ ON	for production line
8.2.4 INITIALIZE			
8.2.4.1 SYNC DET (+)			for technical analysis
8.2.4.2 SG MODE ⇔		SG OFF⇔ • • •	
8.2.4.3 SG PATTERN ⇔		SG PATTERN⇔COLORBAR1 • • •	
8.2.4.4 SIDE MASK LEVEL (+)			
	R MASK LEVEL ⇔	000 to 255	
	G MASK LEVEL ⇔	000 to 255	
	B MASK LEVEL ⇔	000 to 255	
8.2.4.5 FINAL SETUP (+)	DATA RESET ⇔	OFF ⇔ ON	
8.2.4.6 HMG/HG SERVICE MODE	MODE SHIFT ⇔	OFF ⇔ ON	
8.2.4.7 CVT AUTO ⇔			for technical analysis
8.2.4.8 HDMI INTR POSITION (+)	INTR-POS1(0x75) ⇔	000 to 255	for technical analysis
	INTR-POS2(0x76) ⇔	000 to 255	for technical analysis
	INTR-POS3(0x77) ⇔	000 to 255	for technical analysis
	INTR-POS4(0x78) ⇔	000 to 255	for technical analysis

8.1.6 INDICATION (OSD) OF SERVICE FACTORY MODE

■ Indications in Service Factory mode



■ Main-item indications



①	Input function
②	SIG mode and Screen size
③	Color system and Signal type
④	Option

Input function

Input function	OSD
VIDEO1-6	VD1-6
Terrestrial Wave A	ARA
Terrestrial Wave B	ARB
Cable A	CBA
Cable B	CBB
Home Gallery (Regular)	HG
Home Media Gallery (ELITE)	HMG
PC	PC

SIG mode and Screen size
Note: See SIG-Mode Tables.(See next page.)

Color system and Signal type

Color system and signal type		OSD
NTSC	Composite input	NTV
	S-connector input	NTS
Y/CB/CR		CBR
Y/PB/PR		PBR
RGB		RGB
Digital video signal		DIG

Option(Destination, Panel Generation, etc)

Options	OSD
SX System in North America(Regular)	ATB7
SX system in North America(ELITE)	AHB7

②SIG Mode and Screen Size (by User is displayed)

1-2nd Character: SIG-Mode (resolution)
3-4th Character: SIG-Mode (refresh rate)
5th Character: Setting of the screen size that user configured

■SIG-Mode table for video signals (resolutions and V frequencies)

1-4th Character		Signal Type	Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)
10	60	SDTV*525i	60.000	15.750
20	60	SDTV*525p	60.000	31.500
30	60	HDTV*1125i	60.000	33.750
40	60	HDTV*750p	60.000	45.000
50	24	HDTV*1125p	24.000	27.000

■SIG-Mode table for PC signals (resolutions and V frequencies)

1-4th Character		Signal Type	Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)
C1	70	720x400	70.087	31.469
C2	60	640x480	59.940	31.469
	72		72.809	37.861
	75		75.000	37.500
C4	56	800x600	56.250	35.1556
	60		60.317	37.879
	72		72.188	48.077
	75		75.000	46.875
C7	60	1024x768	60.004	48.363
	70		70.069	56.476
	75		75.029	60.023
C9	60	1360x768	60.015	47.712

■Selection of the screen size by the user is displayed.

5th Character	GUI Notation	VIDEO	PC	Remark
0	DOT BY DOT	×	●	
1	4:3	●	●	
2	FULL (FULL1)	●	●	
3	ZOOM	●	×	
4	CINEMA	●	×	
5	WIDE	●	×	
8	FULL2	●	●	

●: supported, ×: unsupported

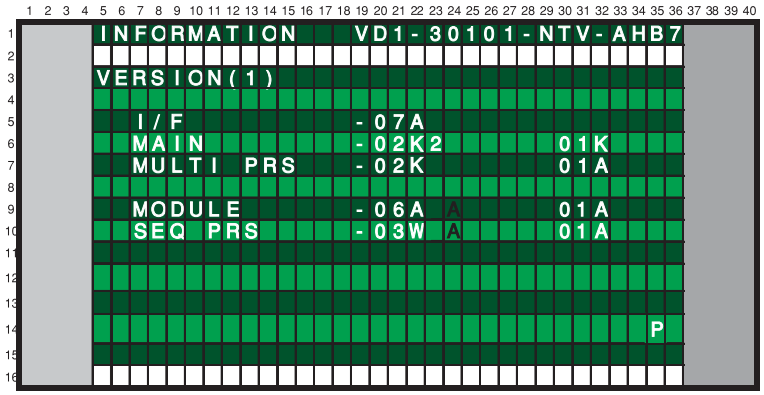
8.2 FACTORY MENU

8.2.1 INFORMATION

■Operation items

No.	Function/Display	Context	RS232C
1	VERSION(1)	The Flash memory versions for each device are displayed. (Common Part)	QS1
2	VERSION(2)	The Flash memory versions for each device are displayed. (Individual Part)	QS6
3	VERSION(3)		QS6
4	MAIN NG	The Shutdown Message ID/Event Times in Main Microcomputer are displayed.	QNG
5	TEMPERATURE	The Temperature/FAN rotating status are displayed.	QMT
6	HOUR METER	The HOUR METER/P-COUNT information are displayed.	QIP
7	HDMI SIGNAL INFO 1	The Information of HDMI information files are displayed.	-
8	HDMI SIGNAL INFO 2		-
9	VDEC SIGNAL INFO	Display the Signal Information on VDEC.	-
10	DTV TUNING STATUS 1	Digital broadcast information and status is displayed upon receiving digital broadcast signal.	-
11	DTV TUNING STATUS 2		-
12	DTV TUNING STATUS 3		-
13	DTV TV-GUIDE BER	TV-Guide Bit Error Rate Information	-
14	DEBUG INFO	Debug Information.	-

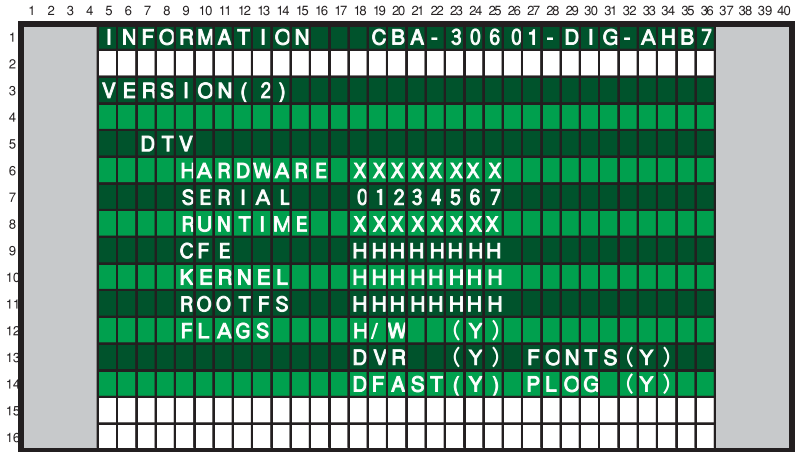
8.2.1.1 Version(1)



Flash Device	Item Name	Ex.		Elite	Regular
		Executed program part	BOOT part		
IF microcomputer	I/F	-07A	–	○	○
MAIN microcomputer	MAIN	-02K2	01K	○	○
Multi processor	MULTI PRS	-02K2	01A	○	○
MODULE microcomputer	MODULE	-06A_A	01A	○	○
Sequence processor	SEQ PRS	-03W_A	01A	○	○

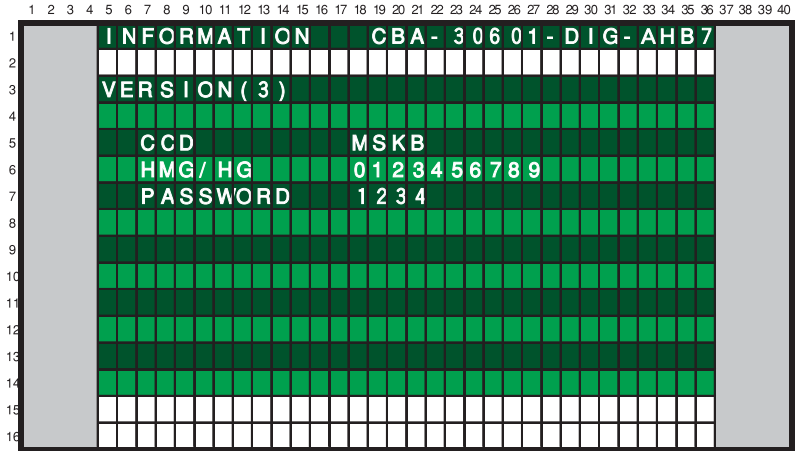
In the 29-32 rows, ROM version information on each device is displayed.
In the 19-24 rows, Version information on a common treatment is displayed.
At the position "14x35", The Past/Highly effective panel distinction information is displayed.
" P " : The past panel, "F" : The highly effective panel

8.2.1.2 VERSION(2)



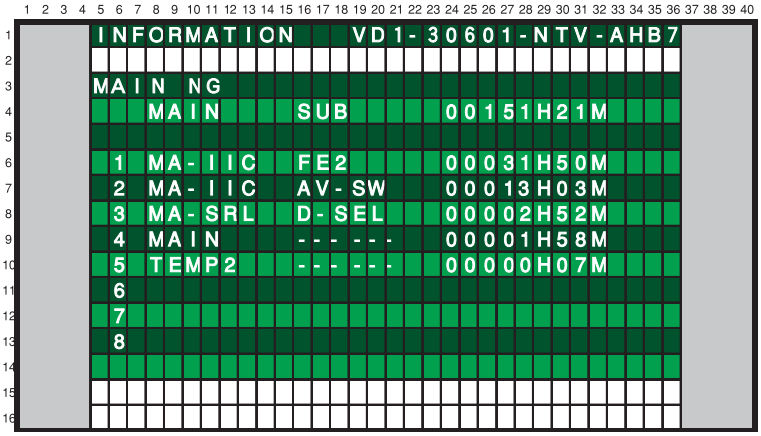
Flash Device	Item Name	Ex.	Elite	Regular
DTVHardware Version	HARDWARE	XXXXXXXX	○	○
DTV Hardware Serial	SERIAL	1234567	○	○
DTV Runtime Version	RUNTIME	XXXXXXXX	○	○
CFE Version	CFE	HHHHHHHH	○	○
KERNEL Version	KERNEL	HHHHHHHH	○	○
ROOTFS Version	ROOTFS	HHHHHHHH	○	○
FLAGS	FLAGS	H/W (Y)	○	○
		DVR (Y) FONTS(Y)	○	○
		DFTS (Y) PLOG (Y)	○	○

8.2.1.3 VERSION(3)



Flash Device	Item Name	Ex.	Elite	Regular
CCD-UCOM Version	CCD	MSKB	○	○
HMG/HG module Version	HMG/HG	0123456789	○	○
User Password	PASSWORD	1234	○	○

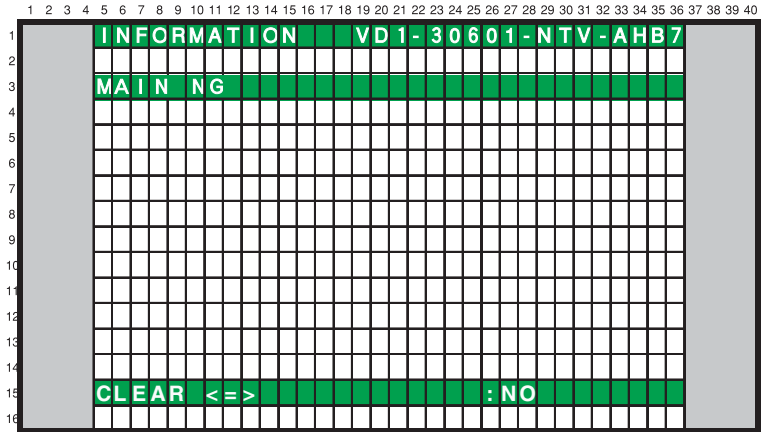
8.2.1.4 MAIN NG



■MTB side's Shutdown NG information

OSD:MAIN	OSD:SUB	Cause of shutdown
AUDIO	----	Shortcircuit of Speaker terminal
MODULE	----	Failure of communication to Module microcomputer
MA-SRL		3-wire Serial Communication of Main microcomputer
	IF	- Communication failure of IF microcomputer
	MULTI1	- MANTA communication failure (MULIT1)
	I/P	- MANTA communication failure (I/P)
	D-SEL	- MANTA communication failure (D-SEL)
MA-IIC		IIC Communication failure of Main microcomputer
	FE1	- Analog Tuner 1 (Front End 1)
	FE2	- Analog Tuner 2 (Front End 2)
	MPX	- MPX
	AUDIO	- Volume IC
	AV-SW	- AV Switch
	RGB-SW	- RGB Switch
	M-VDEC	- Main VDEC
	ADC	- AD/PLL
	HDMI	- HDMI
	MA-EEP	- 64k EEPROM
	CCD	- CCD
MAIN		Communication failure of Main microcomputer &Unknown Error
FAN		Fan stopped
TEMP2		Abnormally high temperature
DTUNER		Failure of Digital Tuner
	PS/RST	- Failure to DTB Starting
	DEVICE	- DTB Device Error
	TV-G	- TV-Guide Error
	HOME-G	- Failure at Home Gallary
MA-PWR	M-DCDC	-Abnormally in RST2 of MAIN Assy (power decrease of DC-DC converter)
	RELAY	-Abnormally in RST4 of MAIN Assy (power decrease of Relay power)
HMG		Failure at Home Media Gallary
	START	-

4.MAIN NG (Continued)

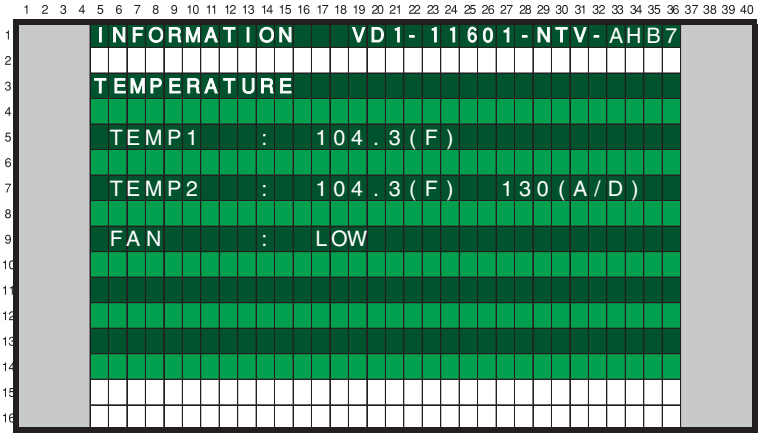


■ **CLEAR Operation**

Even if [←] key or [→] key is pushed, "CLEAR ⇔ YES" ⇔ "CLEAR ⇔ NO" is repeated. If the [ENTER] key is kept on pressing for 5 second when the status of this menu is <YES>, clear process will begin.

8.2.1.5 TEMPERATURE

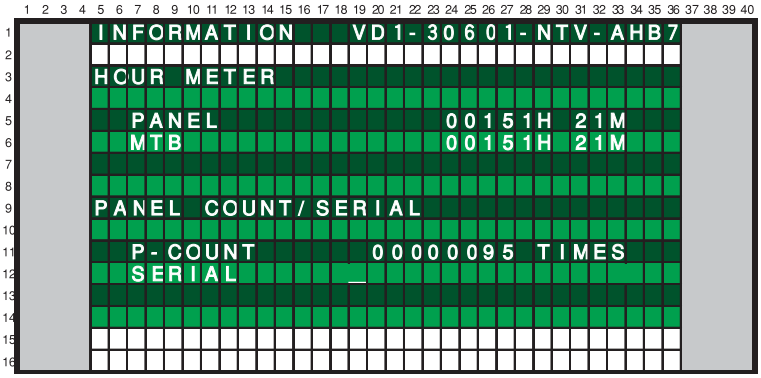
A present temperature and the FAN rotation are displayed.
If either [←] key or [→] key is pressed, the display data is refreshed.



■Display/Meaning

TEMP1 : The temperature of the sensor on the panel side is displayed by Fahrenheit (F).
TEMP2 : The temperature conversion display is done with 10bit the A/D input value of Main uCON 76PIN(AN0). It is displayed by both Fahrenheit (F) and 8bit A/D value. (Remark:When temperature (C) of the sensor becomes more than a specified temperature, the shutdown start of processing.)
FAN : The value of the Fan rotating state is displayed.
STOP:stopped, LOW:slow speed, HIGH:high speed.

8.2.1.6 HOUR METER



■Operation:

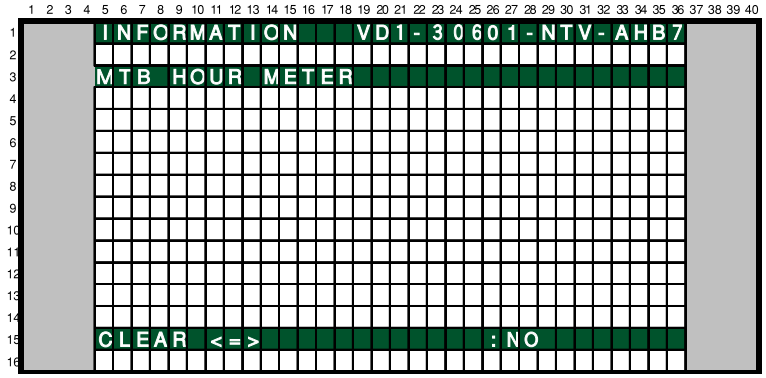
In HOUR METER screen on Factory Menu, press the [ENTER] key, and then it moves to the screen to clear MTB HOUR METER.

■Display / Meaning:

Meaning	Item Name	Ex.	RS-232C command
HOUR METER (PANEL)	PANEL	00151H 21M	QIP
HOUR METER (MTB)	MTB	00151H 21M	–
POWER ON COUNTER	P-COUNT	00000095 TIMES	QIP
SYSTEM SERIAL	SERIAL		QIP

The SYSTEM SERIAL displays only FHD. It corresponds by sticking the seal in G7 model.

The PANEL-side's HOUR METER/P-COUNT acquires information from the PANEL-side.

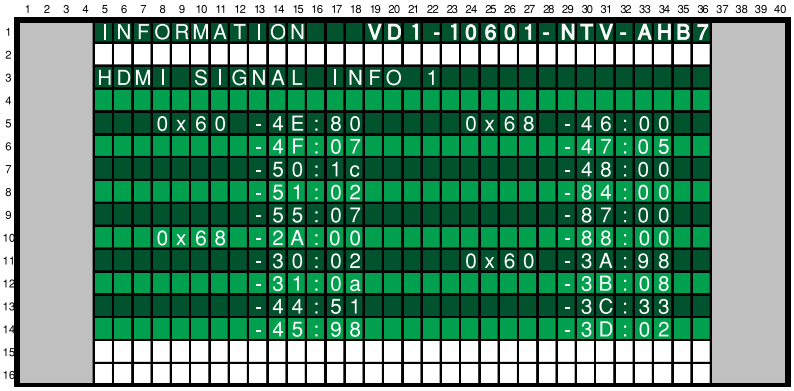


■Operation:

Even if [←] key or [→] key is pushed, "CLEAR <=> YES" <=> "CLEAR <=> NO" is repeated.

If the [ENTER] key is kept on pressing for 5 second when the status of this menu is <YES>, clear process will begin.

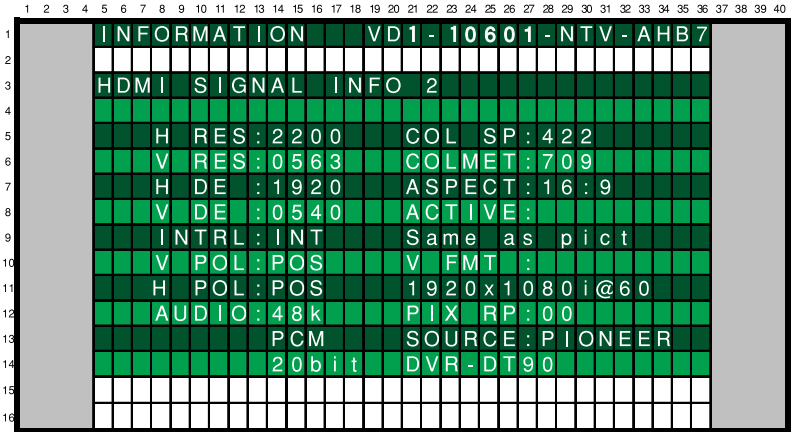
8.2.1.7 HDMI SIGNAL INFO 1



■Displays the input signal information of HDMI terminal.

HDMI SIGNAL INFO 1		
SA		Context
0x60	- 4E:	Video information: valid horizontal pixel numbers (low order bit)
	- 4F:	Video information: valid horizontal pixel numbers (high order bit)
	- 50:	Video information: valid vertical line numbers (low order bit)
	- 51:	Video information: valid vertical line numbers (high order bit)
	- 55:	Video information: interlace/non-interlace, sink polarity
0x68	- 2A:	Audio information: PCM/non PCM, copyright protected or not
	- 30:	Audio information: sampling frequency
	- 31:	Audio information: sampling bit rate
	- 44:	Audio information: color space
	- 45:	Video information: aspect ratio
	- 46:	Video information: scaling
	- 47:	Video information: video format
	- 48:	Video information: pixel count
	- 84:	Audio information: channel count
	- 85:	Audio information: not used (zero at all times)
	- 86:	Audio infromation: not used (zero at all times)
	- 87:	Audio information: speaker allocation
	- 88:	Audio information (down mix prohibit flag)
0x60	- 3A:	Video information: valid horizontal pixel numbers (low order bit)
	- 3B:	Video information: valid horizontal pixel numbers (high order bit)
	- 3C:	Video information: valid vertical line numbers (low order bit)
	- 3D:	Video information: valid vertical line numbers (high order bit)

8.2.1.8 HDMI SIGNAL INFO 2



■Displays input signal status of HDMI terminal.

Item	Meaning
H RES	Number of horizontal pixels (decimal)
V REES	Number of vertical lines (decimal)
H DE	Number of effectively horizontal pixels (decimal)
V DE	Number of effectively vertical lines (decimal)
INTRL	intetlace (=INT) or progressive(=PRG)
V POL	VSYNC polarity
H POL	HSYNC polarity
AUDIO (1 line)	sampling frequency (Ex. DVD : 48 kHz, CD : 44.1 kHz) *1
AUDIO (2 line)	PCM (PCM) or No PCM (=no PCM)
AUDIO (3 line)	Quantization bit
COL SP	color space (AVI Info) (422 or 444 or RGB) *2
COLMET	colormetry (AVI Info) (SD : 601, HD : 709) *2
ASPECT	aspect (AVI Info)
ACTIVE	video active format (AVI Info)
V FMT	video identification code (AVI Info)
PIX RP	pixel repeat value for 2880 dot
SOURCE (1line)	vender name of let-off device
SOURCE (2line)	model name of let-off device

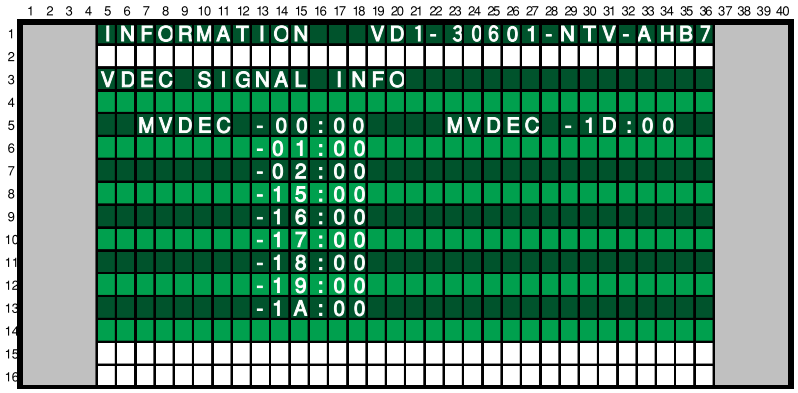
*1 : Confirm if this item is displayed when the audio is not outputted.
*2 : It may not match to the state of source devices when the color is abnormal.

Correspondence between the Display of HDMI FACTORY and the Resolution

Confirm the following 5 items when the video is not outputted.

Input Signal	Display of FACTORY				
	H RES	V RES	H DE	V DE	V FMT
480i (525i)	858	262 or 263	720	240	720x480i @ 60
480p (525p)	858	525	720	480	720x480p @ 60
1080i (1125i)	2200	562 or 563	1920	540	1920x1080i @ 60
720p (750p)	1650	750	1280	720	1280x720p @ 60

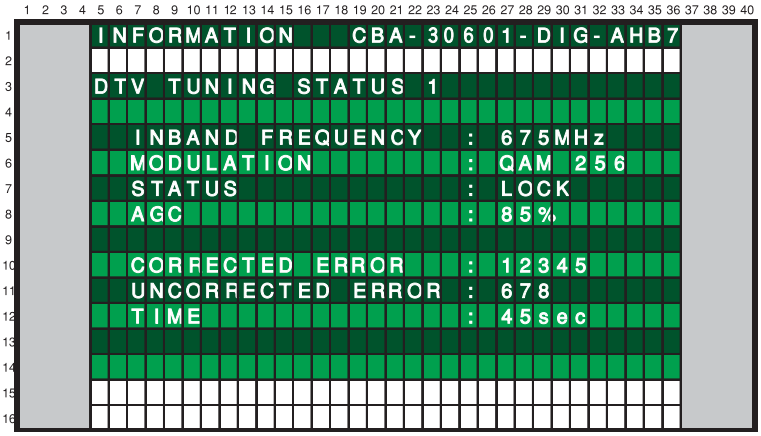
8.2.1.9 VDEC SIGNAL INFO



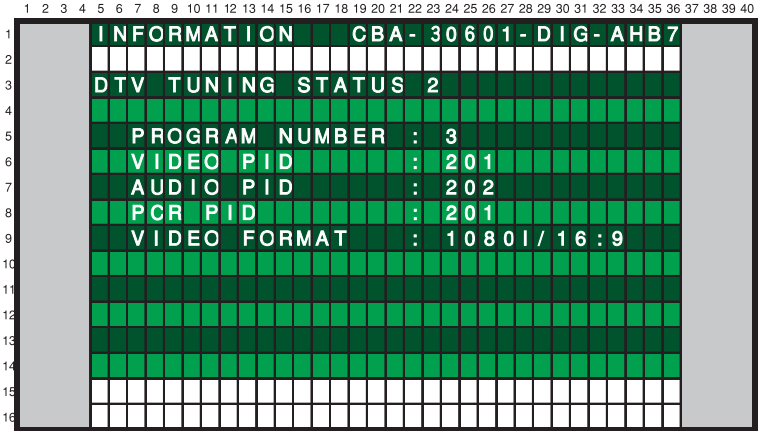
■**Displays input signal status of MVDEC terminal.**

Device	SA	Context
MVDEC	00h	Signal distinct result 1
	01h	Signal distinct result 2
	02h	Flag detection output
	15h	Noise level distinction 1
	16h	Noise level distinction 2
	17h	Non-standard signal detection
	18h	Sub carrier signal detection
	19h	ACC data output
	1Ah	ACC information output
	1Dh	Input signal mode

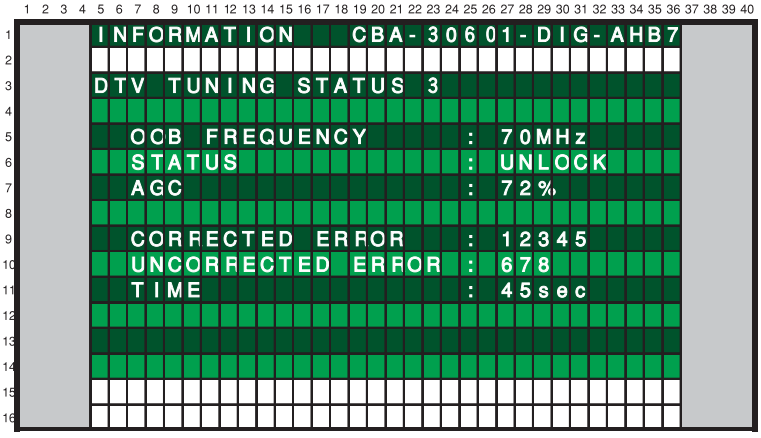
8.2.1.10 DTV TUNING STATUS 1



8.2.1.11 DTV TUNING STATUS 2



8.2.1.12 DTV TUNING STATUS 3



Displays digital broadcast signal information and status upon receiving digital signal.

8.2.1.13 DTV TV-GUIDE BER

Exclusively used for production line. TV-Guide error bit ratio information is displayed.

8.2.1.14 DEBUG INFO

Exclusively used for technical analsyis. Debug information for development use is displayed.

8.2.2 PANEL FACTORY MODE

■ Operation Items

This is the menu screen for the adjustment of the panel. Data acquisition and value adjustment can be performed for the following items:

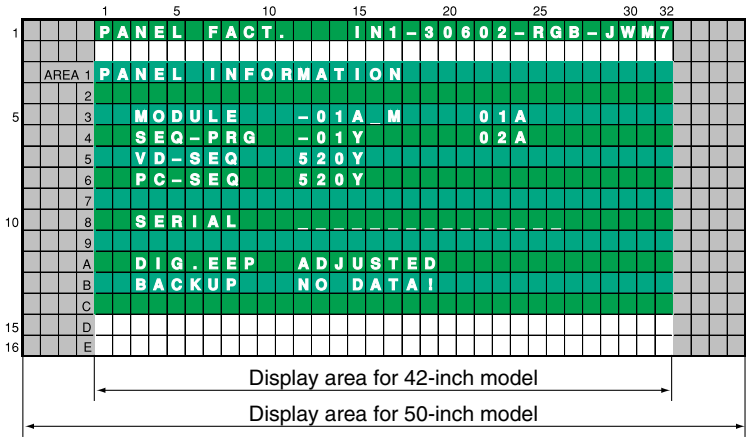
No.	Indication	Description of functions
8.2.2.1	PANEL INFORMATION	Data, such as the version of the microcomputer of the panel, product serial number, and statuses of memories for adjustment values for the main unit and for backup, are displayed.
8.2.2.2	PANEL WORKS	Operation data, such as accumulated pulse-meter count, accumulated hour-meter count, accumulated power-on count, and the temperature detected by the sensor, are displayed.
8.2.2.3	POWER DOWN	The power-down history is displayed, with the hour-meter values that indicate the hour values when power-downs occurred.
8.2.2.4	SHUT DOWN	The shutdown history is displayed, with the hour-meter values that indicate the hour values when shutdowns occurred.
8.2.2.5	PANEL-1 ADJ (+)	Settings of the driving pulse timing and driving voltage can be performed.
8.2.2.6	PANEL-2 ADJ (+)	White balance and ABL (power consumption) for the panel can be set.
8.2.2.7	PANEL REVISE (+)	The level for correction of panel degradation can be set.
8.2.2.8	ETC. (+)	Copying of backup data and clearance of various data can be performed.
8.2.2.9	RASTER MASK SETUP (+)	The mask indication (RASTER) can be set and indicated.
8.2.2.10	PATTEN MASK SETUP (+)	The mask indication (PATTERN) can be set and indicated.
8.2.2.11	COMBI MASK SETUP (+)	The mask indication (COMBI) can be set and indicated.

■ Details of indications in each layer

• In the following examples, GUI images for a 50-inch model are indicated. Although the display areas for the menu for 42-inch and 50-inch models are different, the items to be displayed are the same.

8.2.2.1 PANEL INFORMATION

• Data, such as the version of the microcomputer of the panel, product serial number, and statuses of memories for adjustment values for the main unit and for backup, are displayed. No other layers are nested below this layer, and there are no adjustment items.


PANEL FACT. IN1-30602-RGB-JWM7
AREA 1
PANEL INFORMATION
MODULE -01A_M 01A
SEQ-PRG -01Y 02A
VD-SEQ 520Y
PC-SEQ 520Y
SERIAL _ _ _ _ _ _ _ _ _ _ _ _ _ _ _
DIG.EEP ADJUSTED
BACKUP NO DATA!
Display area for 42-inch model
Display area for 50-inch model

■ Key operation

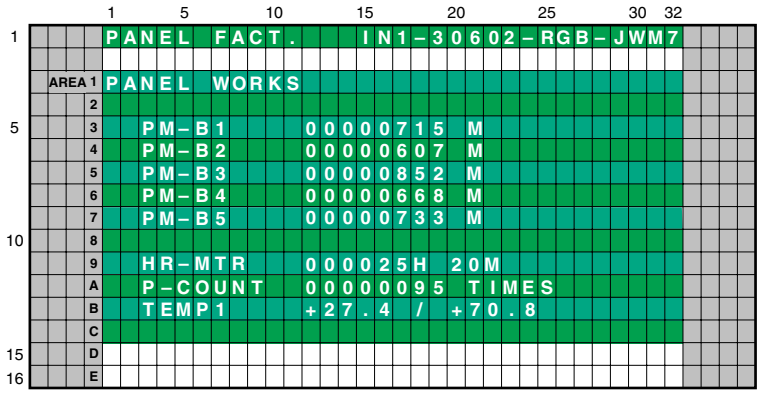
<DOWN> : Shifting to PANEL WORKS
<UP> : Shifting to COMBI MASK SETUP (+)
<L/R> : Updating displayed information

■ Display items:

MODULE : The version of data written in the Module microcomputer (IC3151) is indicated.
SEQ-PRG : The version of data written in the Sequence Program Storage Memory (IC3301) is indicated.
VD-SEQ : The Drive Sequence version for Video mode is indicated.
PC-SEQ : The Drive Sequence version for PC mode is indicated.
SERIAL : The serial number of the module is indicated.
DIG.EEP : The adjusted status of the EEPROM that is mounted on the DIGITAL Assy is indicated.
BACKUP : The adjusted status of the EEPROM for backup that is mounted on the SENSOR Assy is indicated.

8.2.2.2 PANEL WORKS

• Data on operations, such as the accumulated pulse-meter counts, hour-meter count, power-on count, and temperature detected by the sensor, are sent back. No other layers are nested below this layer, and there are no adjustment items.



■ Key operation

<DOWN> : Shifting to POWER DOWN
<UP> : Shifting to PANEL INFORMATION
<L/R> : Updating displayed information

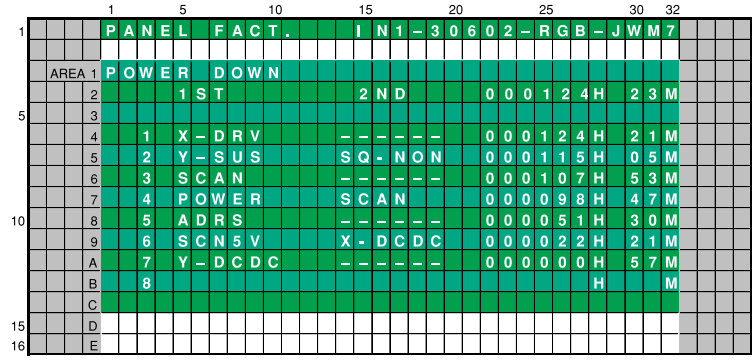
← Temperature unit is " °C (Centigrade) ".

■ Contents of the Display item

• PM-B1 to B5: The accumulated pulse-meter counts for the 5 blocks on the screen are indicated. (the lowest-order digit represents millions of pulses.)
• HR-MTR: The hour-meter value (accumulated power-on hours) is indicated.
• P-COUNT: The accumulated power-on count is indicated.
• TEMP1: The current panel temperature and the historical maximum temperature recorded in memory are indicated.
The range of temperature indication is from -50.0 to +99.9. (The temperature unit is " °C (Centigrade) ".)

8.2.2.3 POWER DOWN

- The power-down history is displayed. The last most 8 power-down histories are displayed with the hour-meter values that indicate the hours when power-downs occurred. No other layers are nested below this layer, and there are no adjustment items.


PANEL FACT. IN1-30602-RGB-JWM7
AREA 1 POWER DOWN
1ST 2ND 0001248H 23M
1 X-DRV ------ 0001248H 21M
2 Y-SUS SQ-NON 0001158H 05M
3 SCAN ------ 0001078H 53M
4 POWER SCAN 0000098H 47M
5 ADRS ------ 0000518H 30M
6 SCN5V X-DCDC 0000228H 21M
7 Y-DCDC ------ 0000000H 57M
8 H M

■ Key operation

<DOWN> : Shifting to SHUT DOWN
<UP> : Shifting to PANEL WORKS
<L/R> : Updating displayed information

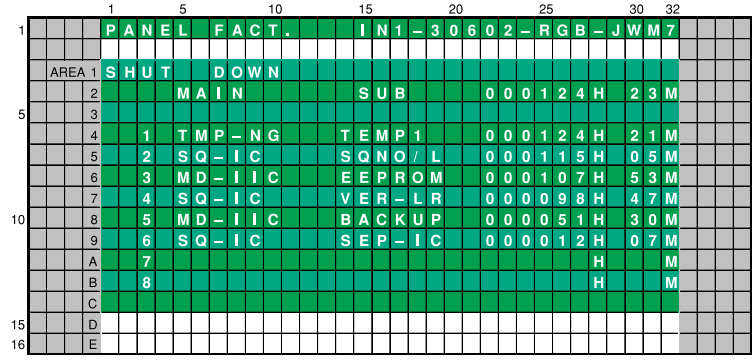
<Causes of power-down and corresponding OSD indications>

Cause of power-down	OSD Indication	Cause of power-down	OSD Indication
POWER SUPPLY Unit	P-PWR	ADDRESS Assy	ADRS
SCAN Assy	SCAN	X DRIVE Assy	XDRV
5V power for SCAN Assy	SCAN5V	DC/DC converter for X drive	X-DCDC
Y DRIVE Assy	YDRV	X-drive SUS circuit	X-SUS
DC/DC converter for Y drive	Y-DCDC	Specification inability	UNKNOWN
Y-drive SUS circuit	Y-SUS		

* When power-down is confirmed, the factor is displayed as "1st", "2nd", according to the accuracy order.
* The power-down history is not recorded when the power-down occurred at the same place and same time.

8.2.2.4 SHUT DOWN

- The shutdown history is displayed. The last most 8 shutdown histories are displayed with the hour-meter values that indicate the hours when shutdowns occurred. No other layers are nested below this layer, and there are no adjustment items.


PANEL FACT. IN1-30602-RGB-JWM7
AREA 1 SHUT DOWN
MAIN SUB 0001248H 23M
1 TMP-NG TEMP1 0001248H 21M
2 SQ-IC SQNO/L 0001158H 05M
3 MD-IIC EEPROM 0001078H 53M
4 SQ-IC VER-LR 0000098H 47M
5 MD-IIC BACKUP 0000518H 30M
6 SQ-IC SEP-IC 0000128H 07M
7 H M
8 H M

■ Key operation

<DOWN> : Shifting to PANEL-1 ADJ (+)
<UP> : Shifting to POWER DOWN
<L/R> : Updating displayed information

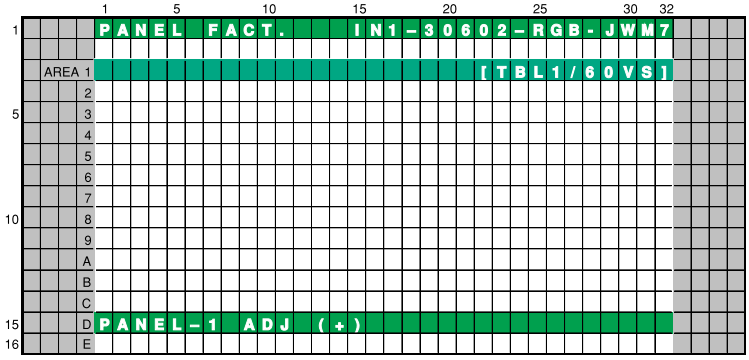
* When there is detail information when shutdown occurred, the possible defective part is displayed as Sub information.

<Causes of shut-down and corresponding OSD indications>

Cause of shut-down (MAIN)		Subcategory of Cause of shut-down (SUB)	
Item	**OSD Indication**	**Item**	**OSD Indication**
Drive Sequence Processing IC	SQ-IC	Communication Error	RTRY
		Drive Sequence Stop	SQNO
		Communication Busy	BUSY
		Version Mismatching	VER-HS
MDU-IIC	MD-IIC	MAIN EEPROM Communication Error	EEPROM
		BACKUP EEPROM Communication Error	BACKUP
		DAC Communication Error	DAC
High temperature of the panel	TMP-NG	Temperature NG	TEMP

8.2.2.5 PANEL-1 ADJ (+)

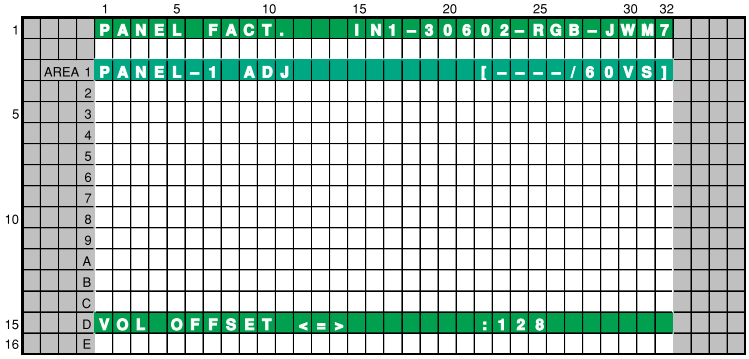
- Timing and voltage for the driving pulse are set. At third line of the screen, the WB (White Balance) table and frequency table indicating operation status are displayed, and at fifteenth line of the screen, the item for the upper nested layer (PANEL-1 ADJ [+]) is displayed. Pressing the SET key shifts the screen to the next nested layer below for item selection.



■ Key operation

<DOWN> : Shifting to PANEL-2 ADJ (+)
<UP> : Shifting to SHUT DOWN
<SET> : Shifting to the next nested layer

- When the screen is shifted to the next nested layer below, the item of the layer above is indicated at third line of the screen, and the item of the layer below is indicated at fifteenth line.
- The configuration of the menu screen is the same for any adjustment item that has lower layers.

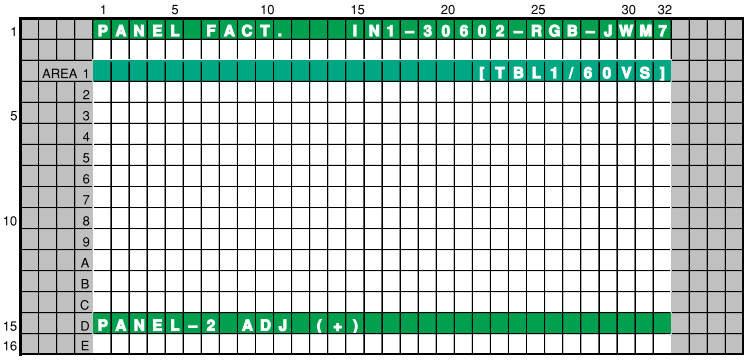


■ Key operation

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/ setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<VOL+> : Adding by 10 to the adjustment/ setting value
<VOL-> : Subtracting by 10 from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

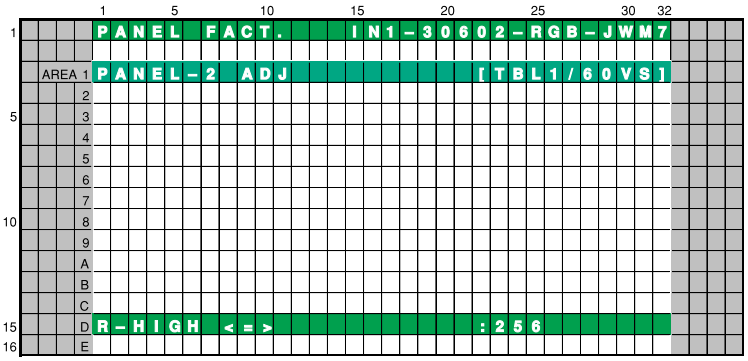
8.2.2.6 PANEL-2 ADJ (+)

- White balance can be adjusted by adjusting R, G, and B gain. Pressing the SET key shifts the screen to the next nested layer below for item selection.



■ **Key operation**

<DOWN> : Shifting to PANEL REVISE (+)
<UP> : Shifting to PANEL-1 ADJ (+)
<SET> : Shifting to the next nested layer

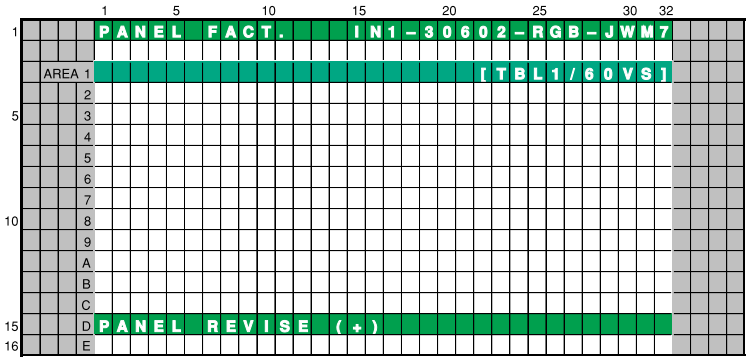


■ **Key operation**

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<VOL+> : Adding by 10 to the adjustment/setting value
<VOL-> : Subtracting by 10 from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

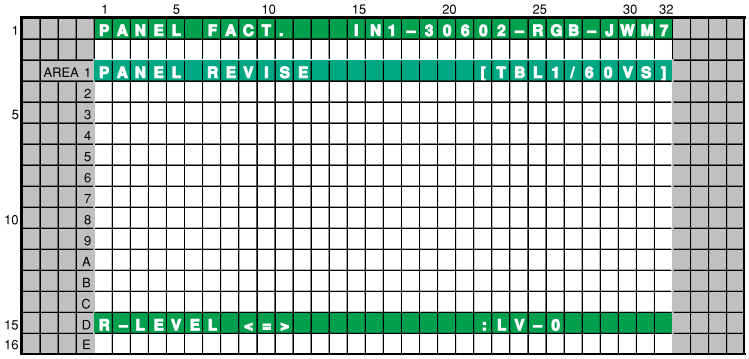
8.2.2.7 PANEL REVISE (+)

- A setting for panel degradation correction can be made. Pressing the SET key shifts the screen to the next nested layer below for item selection.



■ Key operation

<DOWN> : Shifting to ETC.(+)
<UP> : Shifting to PANEL-2 ADJ (+)
<SET> : Shifting to the next nested layer

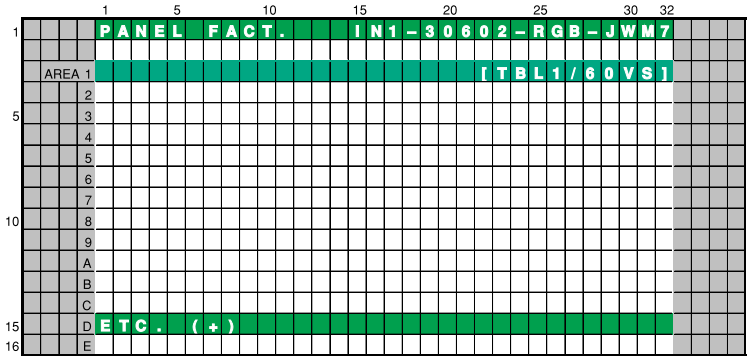


■ Key operation

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/ setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

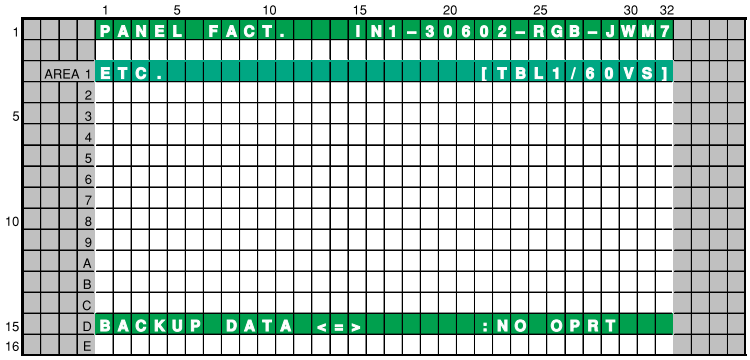
8.2.2.8 ETC. (+)

- The setting about the backup of panel adjusting value and various data on panel operational information can be cleared. Pressing the SET key shifts the screen to the next nested layer below for item selection.



■ **Key operation**

<DOWN> : Shifting to RASTER MASK SETUP (+)
<UP> : Shifting to PANEL REVISE (+)
<SET> : Shifting to the next nested layer

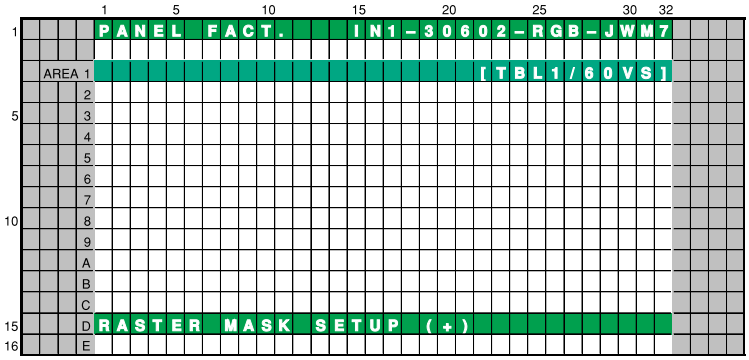


■ **Key operation**

<DOWN> : Shifting to the next item
<UP> : Shifting to the previous item
<RIGHT> : Adding by one to the adjustment/setting value
<LEFT> : Subtracting by one from the adjustment/setting value
<SET> : Determining the adjustment/setting value and shifting to the upper layer

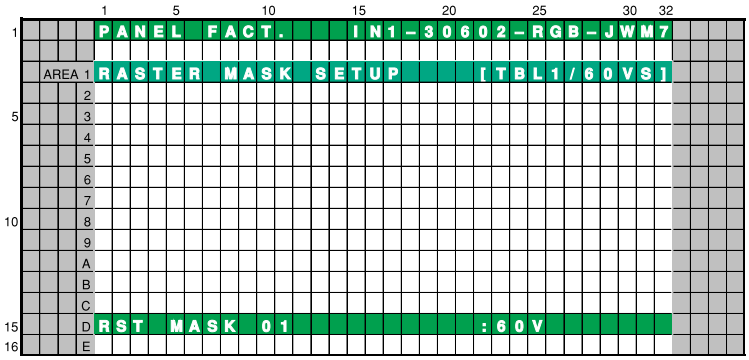
8.2.2.9 RASTER MASK SETUP (+)

- This menu set the RASTER MASK and the drive sequence at RASTER MASK state. Pressing the SET key shifts the screen to the next nested layer below for item selection.



■ Key operation

<DOWN> : Shifting to PATTEN MASK SETUP (+)
<UP> : Shifting to ETC. (+)
<SET> : Shifting to the next nested layer



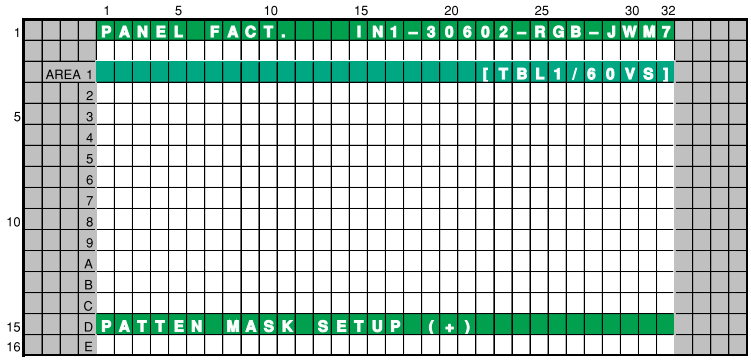
■ Key operation

<DOWN> : Shifting to the next MASK
<UP> : Shifting to the previous MASK
<RIGHT> : Changing MASK sequence (+)
<LEFT> : Changing MASK sequence (-)
<SET> : Determining the adjustment/setting value and shifting to the upper layer

- The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V, 60P, and 70P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.
- 48 V and 60 P are deleted from the sequence, and represented by 50 V and 60 V, respectively. The ABL/WB table is changed to the PC table.

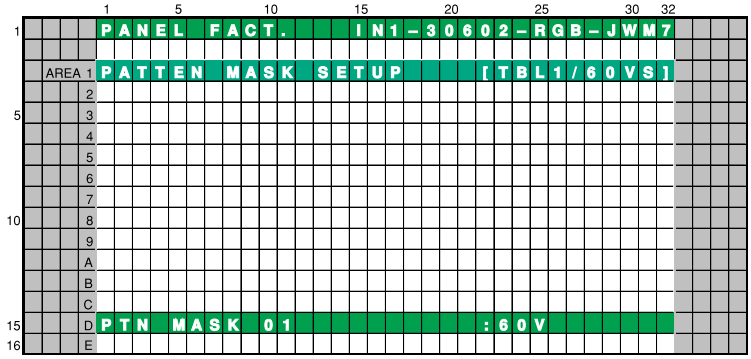
8.2.2.10 PATTEN MASK SETUP (+)

• This menu set the PATTEN MASK and the drive sequence at PATTEN MASK state.



■ Key operation

<DOWN> : Shifting to COMBI MASK SETUP (+)
<UP> : Shifting to RASTER MASK SETUP (+)
<SET> : Shifting to the next nested layer



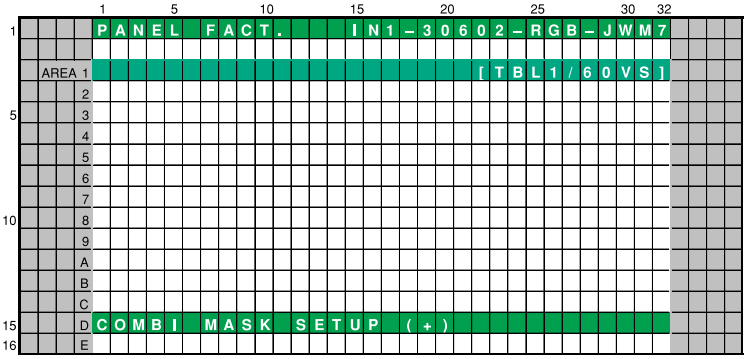
■ Key operation

<DOWN> : Shifting to the next MASK
<UP> : Shifting to the previous MASK
<RIGHT> : Changing MASK sequence (+)
<LEFT> : Changing MASK sequence (-)
<SET> : Determining the adjustment/setting value and shifting to the upper layer

• The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V, 60P, and 70P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.
• 48 V and 60 P are deleted from the sequence, and represented by 50 V and 60 V, respectively. The ABL/WB table is changed to the PC table.

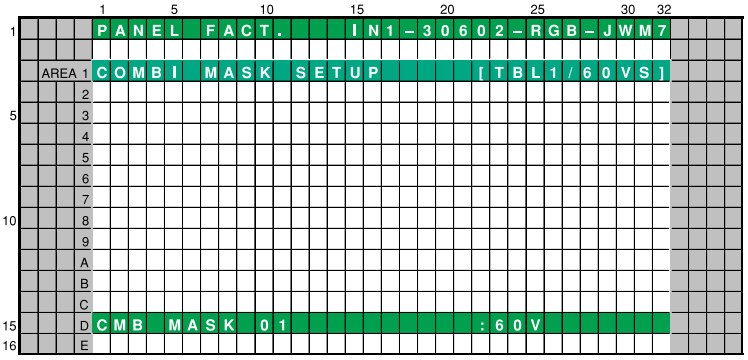
8.2.2.11 COMBI MASK SETUP (+)

• This menu set the COMBI MASK and the drive sequence at COMBI MASK state.



■ Key operation

<DOWN> : Shifting to PANEL INFORMATION
<UP> : Shifting to PATTEN MASK SETUP (+)
<SET> : Shifting to the next nested layer



■ Key operation

<DOWN> : Shifting to the next MASK
<UP> : Shifting to the previous MASK
<RIGHT> : Changing MASK sequence (+)
<LEFT> : Changing MASK sequence (-)
<SET> : Determining the adjustment/setting value and shifting to the upper layer

• The MASK indication sequence can be changed among 48V, 50V, 60V, 72V, 75V, 60P, and 70P, using the Right or Left key. The selected sequence and the ABL/WB table are retained until the mask is turned off.
• 48 V and 60 P are deleted from the sequence, and represented by 50 V and 60 V, respectively. The ABL/WB table is changed to the PC table.

8.2.3 OPTION MODE

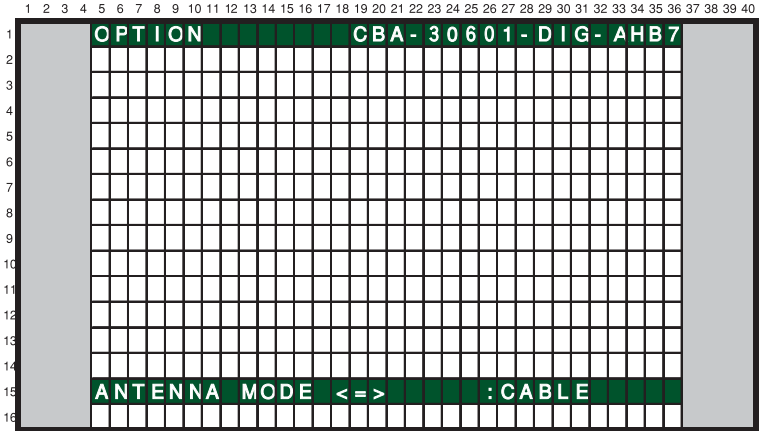
■**Operation item**

No.	Function/Display	Content	RS232C
1	EDID WRITE MODE ⇔	DISABLE ⇔ ENABLE	-
2	ANTENNA MODE ⇔	CABLE ⇔ AIR	-
3	AFT ⇔	Controls AFT action by turing ON / OFF	-

8.2.3.1 EDID WRITE MODE

Exclusively used for production line.

8.2.3.2 ANTENNA MODE



Receiving Cable/Air signal with equipped/unequipped DTB tuner.

① When DTV tuner is equipped
It is effective during tuner function only (others are gray-downed). The currently viewed ANT A/ANT B function's cable/air (both analog and digital) signal are changed. The channel settings are memorized (memorized by DTV side).

② When DTV tuner is unequipped
It is possible for ANT A/ANT B function to receive air/cable signal.
Channel settings are not memorized. But after leaving factory mode, the settings are maintained.
If the air/ cable signal is changed, the reserved allocation map is written.
For example, if the signal is changed to air, then the air's broadcast map is configured, and cable's broadcast map is destroyed.
If the signal is changed to cable, then the cable's broadcast map is configured, and air's broadcast map is destroyed.

OSD display	Funcrion	Control device
CABLE	Change the antenna setting to cable	
AIR	Change the antenna setting to air	

8.2.3.3 AFT

Exclusively used for production line.

8.2.4 INITIALIZE MODE

■**Operation item**

No.	Display	Content	RS232C
1	SYNC DET(+)	Exclusively used for technical analsyis.	-
2	SG MODE	Paired SG_MODE with SG_PATTERN. Select SG Route.	-
3	SG PATTERN	Paired SG_MODE with SG_PATTERN. Select SG Pattern.	-
4	SIDE MASK LEVEL(+)	Configure the color of the side mask.	BSL GSL RSL
5	FINAL SETUP(+)	Initialize flash memorys on virgin product status	FST
6	HMG/HG SERVICE MODE	Enter HMG/HG SERVICE MODE	-
7	CVT AUTO	Exclusively used for technical analsyis.	-
8	HDMI INTR POSITION(+)	Exclusively used for technical analsyis.	-

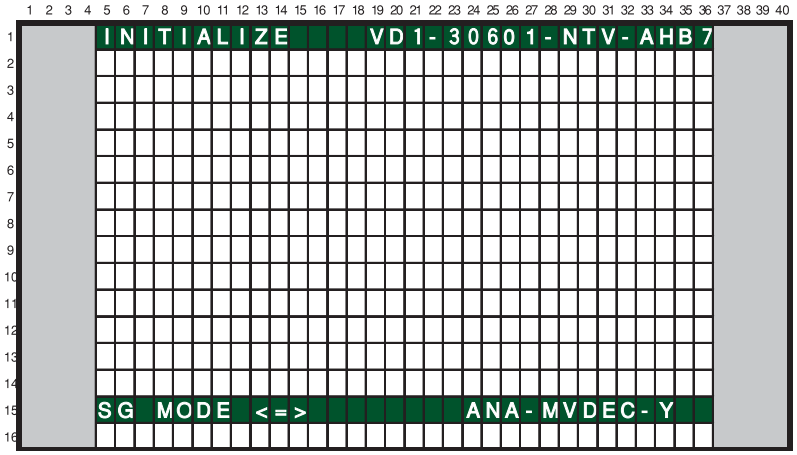
Note : When there is an altered history due to an open TRAP SW, if the "DISPLAY" key is held for at least 5 seconds on the above menu, the altered history will be cleared and the unit will be back to normal.

8.2.4.1 SYNC DET(+)

Exclusively used for technical analsyis (details omitted).

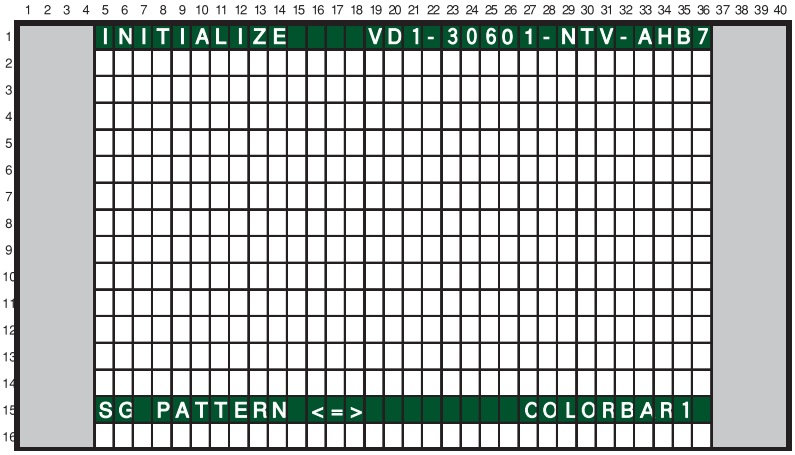
8.2.4.2 SG MODE

SG MODE (SG's route selection)/SG PATTERN (signal pattern selection) are used as pair. In SG MODE, select the SG route and then select the SG pattern to be sent by the selected route. In SG MODE, make sure to select the route first.



No.	Display	Content
1	SG OFF	SG Mode is OFF.
2	DIG MVDEC YCBCR	MAIN VDEC: YCbCr (Digital output mode)
3	ANA MVDEC YCBCR	MAIN VDEC: YCbCr (Analog output mode)
4	ANA MVDEC Y	MAIN VDEC: Y (Analog output mode: SG VDEC return setting)
5	ANA AD YCBCR	AD: YCbCr
6	ANA AD RGB	AD: RGB

8.2.4.3 SG PATTERN

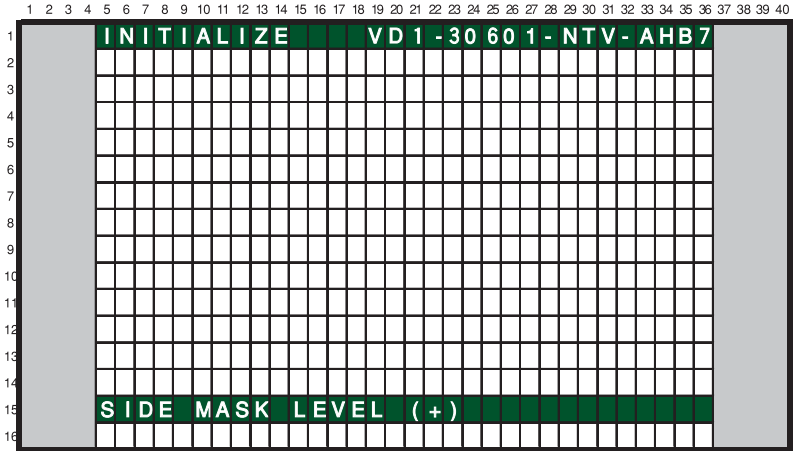


No.	Function/Display	SG Pattern(Brightness IRE Level/Color)
1	COLOR BAR1	Colorbar (75%)
2	COLOR BAR2	Colorbar (100%)
3	RAMP1	Ramp (100% white)
4	RAMP2	Ramp (100% Yellow)
5	RAMP3	Ramp (75% Green)
6	RAMP4	Ramp (75% Red)
7	RAMP5	Ramp (75% Blue)
8	RASTER1	Raster (100% White)
9	RASTER2	Raster (75% Yellow)
10	RASTER3	Raster (75% Cyanide)
11	RASTER4	Raster (75% Green)
12	RASTER5	Raster (75% Magenta)
13	RASTER6	Raster (75% Red)
14	RASTER7	Raster (75% Blue)
15	RASTER8	Raster (-% Black)
16	10STEP1	10STEP (100% white)
17	10STEP2	10STEP (100% Yellow)
18	10STEP3	10STEP (75% Green)
19	10STEP4	10STEP (75% Red)
20	10STEP5	10STEP (75% Blue)

■Notes when using SG MODE/SG PATTERN

- During factory mode, choose the correct route when changing.
- Basically, during VDEC SG output, make sure to connect SG output's Y or G to the AVI input terminal of VDEC.
- During SG MODE, turn off the blanking 50IRE setup function.
- During VDEC SG output, set the YC seperation setting to NTSC.
- It is possible to use ANALOG OUT MODE together during DIGITAL OUT MODE. The Main VDEC can output digital color difference, in which colors will appear. But the route to VDEC input cannot be analysed therefore care should be taken when using. Depending on the situation, please use the proper analog/digital output.
- The SG MODE outputs color difference and RGB only. Therefore, in the case of CVBS, only the Y input is used resulting in no color. This is not a damage result nor error.
- The SG MODE's ANA AD RGB (route to input 525i to AD by RGB) as a set's route, the setting does not exist. For this account the latter part from MVDEC does not have set values, resulting in having funny colors in colorbar, the brightness changes after switching, etc. This is not a damage result nor error.
- Depending on MVDEC's part version, ANA_MVDEC_YCBCR may not display colors.

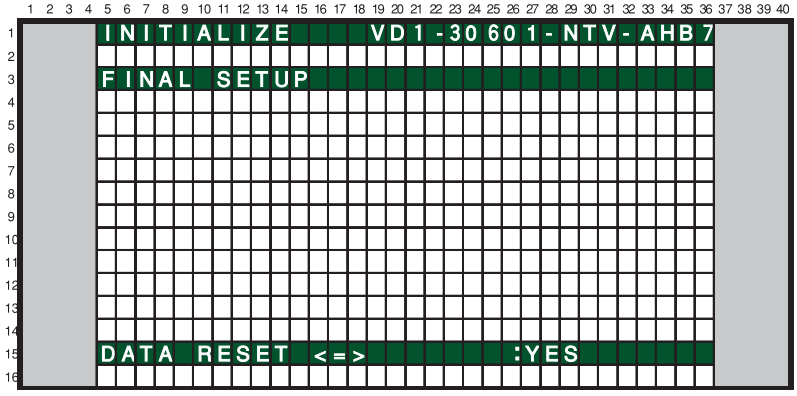
8.2.4.4 SIDE MASK LEVEL



To configure sidemask's R, G, B level (To adjust the values, input signal is required).

No.	Display	Content	RS232C
1	R MASK LEVEL ⇔	Adjust Side Mask R (Initial value : 80, Adjustable range: 000-255)	RSL
2	G MASK LEVEL ⇔	Adjust Side Mask G (Initial value : 80, Adjustable range: 000-255)	GSL
3	B MASK LEVEL ⇔	Adjust Side Mask B (Initial value : 80, Adjustable range: 000-255)	BSL

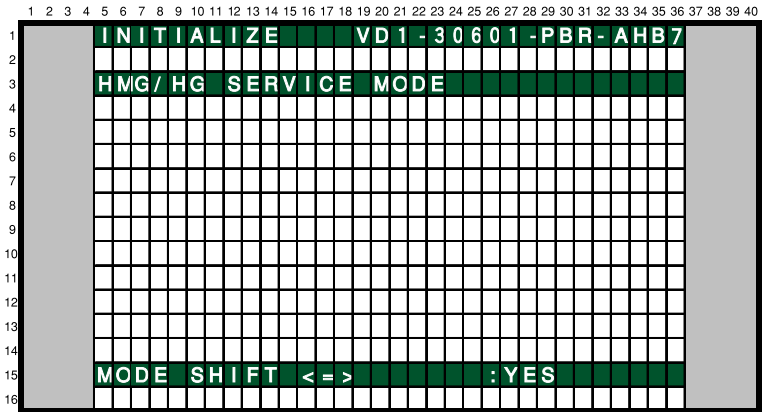
8.2.4.5 FINAL SET UP



To reset each memory value sto factory default values. Factory command is "FST".
When the configuration is set to <NO> and the [SET] key is pressed, no action is taken and the menu returns to previous screen.
When the configuration is set to <YES> and the [SET] key is pressed for 5 seconds, the reset action executes.

Be sure to disconnect and connect the Power cord after the FINAL SETUP.
When replacing the MAIN ASSY, the FINAL SETUP is required.

8.2.4.6 HMG/HG SERVICE MODE



The value of all memorized data are set to shipment status.
If the [ENTER] key is kept on pressing for 5 second when the status of this menu is <YES>, HMG/HG SERVICE mode will be done.

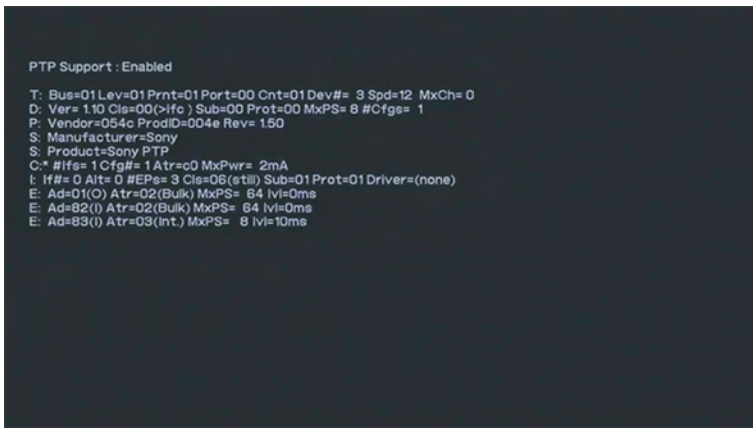
For ELITE model
Be sure to do above procedure at input fuction except HMG.

■ 2nd FACTORY MODE

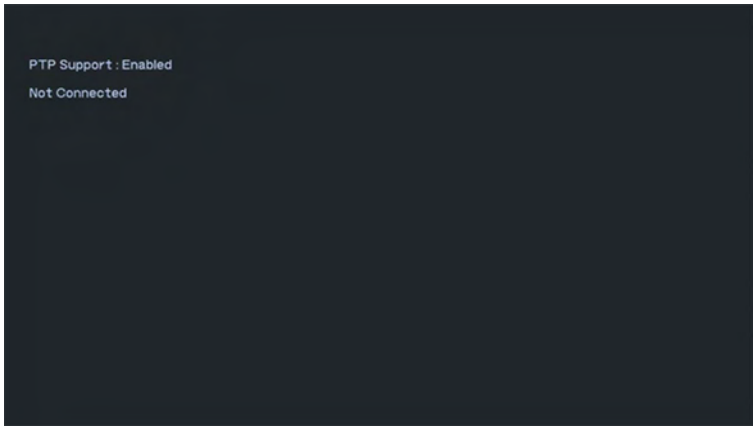
[Home Gallery] (Regular Model)

1. Home Gallery Screen

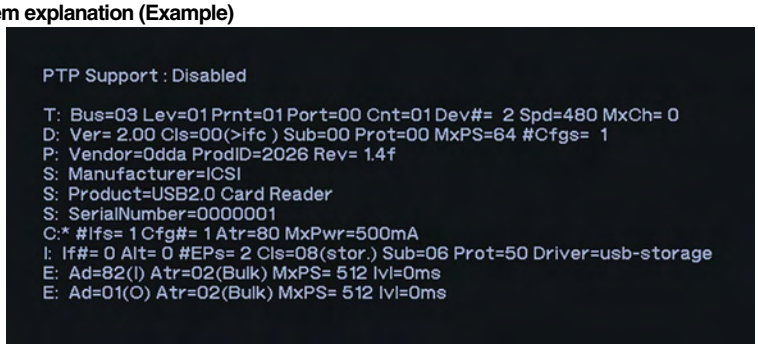
(1) When the device is connected


PTP Support : Enabled
T: Bus=01 Lev=01 Prnt=01 Port=00 Cnt=01 Dev#= 3 Spd=12 MxCh= 0
D: Ver= 1.10 Cls=00(>ifc) Sub=00 Prot=00 MxPS= 8 #Cfgs= 1
P: Vendor=054c ProdID=004e Rev= 1.50
S: Manufacturer=Sony
S: Product=Sony PTP
C:* #Ifs= 1 Cfg#= 1 Atr=c0 MxPwr= 2mA
I: If#= 0 Alt= 0 #EPs= 3 Cls=06(still) Sub=01 Prot=01 Driver=(none)
E: Ad=01(O) Atr=02(Bulk) MxPS= 64 Ivl=0ms
E: Ad=82(I) Atr=02(Bulk) MxPS= 64 Ivl=0ms
E: Ad=83(I) Atr=03(Int.) MxPS= 8 Ivl=10ms

(2) When the device is not connected



(3) Each item explanation (Example)


① PTP Support : Disabled
② T: Bus=03 Lev=01 Prnt=01 Port=00 Cnt=01 Dev#= 2 Spd=480 MxCh= 0
③ D: Ver= 2.00 Cls=00(>ifc) Sub=00 Prot=00 MxPS=64 #Cfgs= 1
④ P: Vendor=0dda ProdID=2026 Rev= 1.4f
⑤ S: Manufacturer=ICSI
⑥ S: Product=USB2.0 Card Reader
⑦ S: SerialNumber=0000001
⑧ C:* #Ifs= 1 Cfg#= 1 Atr=80 MxPwr=500mA
⑨ I: If#= 0 Alt= 0 #EPs= 2 Cls=08(stor.) Sub=06 Prot=50 Driver=usb-storage
⑩ E: Ad=82(I) Atr=02(Bulk) MxPS= 512 Ivl=0ms
⑪ E: Ad=01(O) Atr=02(Bulk) MxPS= 512 Ivl=0ms

① **PTP Support**

Disable	PTP Non-Support	String
Enable	PTP Support	String

② **T (Topology info)**

Bus	Bus Number	Decimal
Lev	Level in topology for this bus	Decimal
Prnt	Parent Device Number	Decimal
Port	Connector/Port on Parent for this device	Decimal
Cnt	Count of devices at this level	Decimal
Dev#	Device Number	Decimal
Spd	Device Speed in Mbps	Decimal
MxCh	Max Children	Decimal

③ **D (Device descriptor info)**

Ver	Device USB version	Hexadecimal
Cls	Device Class	Hexadecimal
Sub	Device Sub Class	Hexadecimal
Prot	Device Protocol	Hexadecimal
MxPS	Max Packet Size of Default Endpoint	Decimal
#Cfgs	Number Configurations	Decimal

④ **P (Product ID info)**

Vendor	Vendor ID code	Hexadecimal
ProdID	Product ID code	Hexadecimal
Rev	Product revision number	Hexadecimal

⑤ **S (String descriptor info - 1)**

Manufacturer		String

⑥ **S (String descriptor info - 2)**

Product		String

⑦ **S (String descriptor info - 3)**

SerialNumber		String

⑧ **C (Configuration descriptor info)**

#Ifs	Number of Interfaces	Decimal
#Cfg	Configuration Number	Decimal
Atr	Attributes	Hexadecimal
MxPwr	MaxPower in mA	Decimal

⑨ **I (Interface descriptor info)**

If#	Interface Number	Decimal
Alt	Alternate Setting Number	Decimal
#Eps	Number of Endpoints	Decimal
Cls	Interface Class	Hexadecimal(String)
Sub	Interface Sub Class	Hexadecimal
Prot	Interface Protocol	Hexadecimal
Driver	Driver name	String

⑩ **E (Endpoint descriptor info)**

⑪ **E (Endpoint descriptor info)**

Ad	Endpoint Address (I=In, O=Out)	Hexadecimal(String)
Atr	Attributes	Hexadecimal(String)
MxPS	Endpoint Max Packet Size	Decimal
Ivl	Interval (max) between transfers	Decimal

2. End method

It is the same as the case that Home Gallery displays.

9. LIST OF RS-232C COMMANDS

9.1 RS-232C COMMANDS OUTLINE

9.1.1 PREPARED TOOLS

It is necessary to prepare the following tools to use RS-232C command.

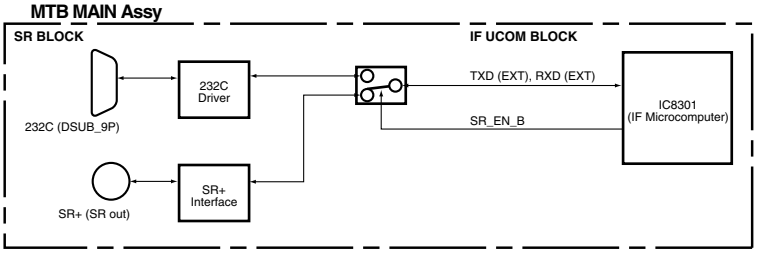
- PC
- Application for control
- 232C cable (straight)

* It is not likely to operate correctly in Win98 function/ ME and Win for foreign countries.
* The setting of the Com port cannot be communicated if it has not been done correctly. (Please follow a operating instructions of the PC about the Com port.)

9.1.2 USING RS-232C COMMANDS

For the PDP-4271HD/KUCXC, PDP-5071PU/KUCXC, PRO-940HD/KUCXC and PRO-1140HD/KUCXC series Plasma Displays, the circuitry is structured as shown in the diagram below to support the SR+ system. Controlling with either the SR+ system or RS-232C commands can be selected.
As the SR+ system is selected at shipment, to control with RS-232C commands in servicing it is necessary to switch the paths. After servicing, be sure to return the setting to the SR+ system.

● Rough diagram of switching between SR+ and RS-232C



■ How to switch SR+/RS-232C ?

There are "How to switch SR+/RS-232C by remote control in Standby Mode" and "How to switch SR+/RS-232C by remote control in the INTEGRATOR MENU" as a Method

① To select SR+/RS-232C by remote control in Standby Mode

During Standby mode, the following operation is done within 10 seconds.
To select from SR+ to RS-232C/To select from RS-232C to SR+)
During standby mode, hold the [**VOLUME+(or-)**] key on the remote control unit pressed for 3-10 seconds. →Then within 3 seconds after the key is released, hold the [**2-screen**] key released, use the [**SET(ENTER)**] key on the remote control unit to set to RS-232C(the baud rate last selected is chosen) or the [**HOME MENU**] key to set to SR+

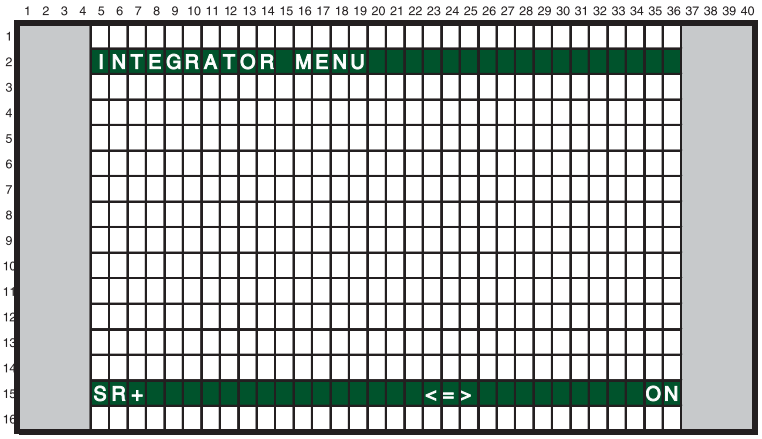
During IF Standby mode (once 10 seconds or more has passed after the LED goes dark during communication), the first key press may not be accepted. In such a case, for a key operation, first press any key other than the [**POWER**] key and [**CH**] keys, then the desired key.

At the switch SR+/RS-232C, the LED will be blinked on the fixed time.

② To select SR+/RS-232C in the INTEGRATOR MENU

How to enter INTEGRATOR MENU.
During standby mode, press the [**Home Menu**] key, and then press the [**POWER**] key within 3 seconds. Or during Factory mode, hold the [**INTEGRATOR**] key.

In INTEGRATOR MENU, there is a OSD where SR+(or RS-232C) is turned on/off, and it switches on the screen.



9.1.3 COMMAND PROTOCOL

■Communication protocol : Asynchronous serial communication by RS-232C

Start bit length : 1 bit
Data width : 8 bit (ASCII code/ no distinction between upper case and lower case)
Parity : None
Stop bit length : 1 bit
Baud rate : 1200/2400/4800/19200/38400 bps (Initial value : 9600 bps)

■ Adjustment function

Direct effectivity of numbers : When a number is transmitted after a command, an adjustment value can be directly set.

■ Data format

The format of the control signal transmitted from the user side controller is as described below.
STX (02Hex) is arranged at the time of communication start and ETX (03Hex) is arranged at the time of data transmission complete, and ID, command and parameter are arranged in between. Data consists of ASCII type alphanumeric characters, and there is no distinction between the upper case and the lower case.

● In the case of command only
[single function command]

STX	ID	Command	ETX
0x02	**	□□□	0x03

● When setting/adjustment data is accompanied
[setting/adjustment command]

STX	ID	Command	Parameter	ETX
0x02	**	□□□	△△△	0x03

■Command processing

Command processing starts as soon as the command is entered.
ID shall be the two asterisks, "**".

■Confirmation of reception

The module microcomputer will make judgment to the command received from the main side, and if the command is judged to be an effective one, processing will be executed. When the system is in the standby status for the next command after completion of the processing, a reply to the received command is sent out. The data to be responded is a data in the upper case after deleting the ID code from the received command.

● When setting/adjustment data is accompanied

Data transmitted from PC

STX	ID	Command	Parameter	ETX
0x02	**	□□□	△△△	0x03

→

Reply data

STX	Command	Parameter	ETX
0x02	□□□	△△△	0x03

● In the case of command only

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

→

Reply data

STX	Command	ETX
0x02	□□□	0x03

When responding, ERR is sent back if the command is unknown, and XXX is sent back if the command itself is valid but it cannot be processed because of its status.

● In the case of invalid command

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

→

Reply data

STX	Command	ETX
0x02	ERR	0x03

● In the case of a command not executable due to its status

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

→

Reply data

STX	Command	ETX
0x02	XXX	0x03

■Processing in the case of an error

If a communication error occurs between STX and ETX, processing of that command is stopped, and the reception buffer is cleared. In the command reception process, the character string transmitted after the receipt of STX are continued to be stored in the register, and by receipt of ETX, the character string sandwiched between STX and ETX is recognized as a command. If the prepared character string storage buffer (24 bytes including STX, ID and ETX) is exceeded, a reply will not be sent out.

9.1.4 DEFINITION OF COMMAND

■Single function command

It is a command that a command alone will complete an operation, and the command section consists of three characters.

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	□□□	0x03

→

Reply data

STX	Command	ETX
0x02	□□□	0x03

■Adjustment command and adjustment value

It is a command, accompanied by an adjustment value, to change the parameter value, and the command section is also three characters as in the case of a single function command. The adjustment value is a three character decimal numerical data within the range of 000-999. Incidentally, the adjustable range will be different depending on the function to be adjusted. (Be careful as it is not always up to 999.)

Data transmitted from PC

STX	ID	Command	Parameter	ETX
0x02	**	CNT	128	0x03

→

Reply data

STX	Command	Parameter	ETX
0x02	CNT	128	0x03

∗XXX will be transmitted if the received command is exceeding the adjustable range of the adjustment value.
∗When the same setting value is transmitted consecutively for two times or more, the setting is overwritten without responding with XXX even though the command is invalid, and an ACK after deleting the ID is sent back.

■Setting command and setting value

It is a command, accompanied by a setting value, to change the setting value of the parameter, and the command section consists of three characters. The setting value consists of three characters, and the first character is fixed to S and the remaining two characters are decimal numbers within the range of S00-S99.

Data transmitted from PC

STX	ID	Command	Parameter	ETX
0x02	**	MKS	S02	0x03

→

Reply data

STX	Command	Parameter	ETX
0x02	MKS	S02	0x03

∗XXX will be transmitted if the received command does not exist as a setting value.
∗When the same setting value is transmitted consecutively for two times or more, the setting is overwritten without responding with XXX even though the command is invalid, and an ACK after deleting the ID is sent back.

■Status acquisition (QUEST) command

This is a command to report the operational status and the setting value to the system side.
When a command is received from the system side, an applicable content depending on the type of command is read out from the memory and sent back.
The command section consists of three characters, and the first character is fixed to Q. The second character and on are set depending on the content of the information.
When sending back a reply data, the received command, various data converted to ASCII code and checksum of that data are added and sent.
The data length will be subject to each individual specification as the content of a reply will be different depending on the type of QUEST command.

Data transmitted from PC

STX	ID	Command	ETX
0x02	**	QS1	0x03

→

Reply data

STX	Command	Parameter	ETX
0x02	QS1	••••••••	0x03

9.2 LIST OF RS-232C COMMANDS

RS-232C commands can be used in Service Factory mode. Before using RS-232C commands, it is necessary to change the factory presetting. See "6.5.1 OUTLINE OF THE RS-232C".

[Note ; If you want to see version infomation (ex. QS1, QS6, Factory, Menu), Please see 10 seconds after starting.]

■ RS-232C command list

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
A							
ABL	***	Adjusting the upper limit of the power	●		Mod	●	
AMT	S00	Cancelling the Audio mute		●			
	S01	Cancelling the Audio mute		●			
APW	S00	WB correction interlocked with APL: OFF	●			●	
	S01	WB correction interlocked with APL: ON	●			●	
B			**MDU**	**MTB**			
BCP		Copying the backup data in the EEPROM	●			●	
BHI	***	User white balance : BLUE highlight	●				
BLW	***	User white balance : BLUE lowlight	●				
BRT	***	User brightness	●				
BSM	S00	After image/Burning safe mode: OFF	●				
	S01	After image/Burning safe mode: ON	●				
BSL		Adjusting Side Mask Level BLUE		●			
BSS		Moving to BSD service mode		●			
C			**MDU**	**MTB**			
CBU		Clearing backup data of EEPROM	●			●	
CHM		Clearing data of the hour meter	●			●	
CHN	FWD	Changing tuner preset channel (1 step forward)		●			
	REV	Changing tuner preset channel (1 step reverse)		●			
CHR		Clearing data of the hour meter of MTB side		●		●	
CNT	***	User contrast	●				
CMT		Clearing data of the maximum temperature	●			●	
CPC		Clearing power-on count data	●			●	
CPD		Clearing power-down histrory	●			●	
CPM		Clearing data of the pulse meter	●			●	
CSD		Clearing shutdown history	●			●	
CTM		Clearing working log	●			●	
D			**MDU**	**MTB**			
DRV	S00	Main power off	●				
	S01	Main power on	●				
DW*		To subtract *** to the adjustment value (*** = 000 to 999, designated by a function command)		●			
E			**MDU**	**MTB**			
ESV	S00	Setting Power Consumption mode to normal sequence & normal curve	●				
	S01	Setting Power Consumption mode to silent sequence & normal curve	●				
	S02	Setting Power Consumption mode to silent sequence & power-saving curve	●				
	S10	Setting Power Consumption mode to normal sequence & normal curve	●				
	S11	Setting Power Consumption mode to silent sequence & normal curve	●				
	S12	Setting Power Consumption mode to silent sequence & power-saving curve	●				
F			**MDU**	**MTB**			
FAJ		Determining the flag of the DIGITAL Assy adjustment in "adjustment is completed"	●			●	
FAN		Factory mode off	●	●		●	
FAY		Factory mode on	●	●			
FST		Set each memory setting of MTB side to the shipment state.		●			
G			**MDU**	**MTB**			
GHI	***	User white balance : GREEN highlight	●				
GLW	***	User white balance : GREEN lowlight	●				
GSL		Green side mask level adjustment		●		●	

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
I							
INA	***	Terrestrial analog signal switched by tuner (ANTENNA A)		●		●	
	***###	Switching the terrestrial digital signal (ANTENNA A) and terrestrial analog signal		●			
	***	Switching the terrestrial analog signal (ANTENNA A)		●			
INB		Switching the terrestrial analog signal (ANTENNA B)		●			
INC	***	Switching the terrestrial digital signal (EUC is Step-upD and RegularD only, and IBD is AU only)		●			
IND		Satellite digital signal switched by tuner (BS)		●			
INE		Satellite digital signal switched by tuner (CS1)		●			
INF		Satellite digital signal switched by tuner (CS2)		●			
ING		Switching iLink input function		●			
INH		Switching SD card/PCMCIA card		●			
INP	S01	Input switch: INPUT 1		●			
	S02	Input switch: INPUT 2		●			
	S03	Input switch: INPUT 3		●			
	S04	Input switch: INPUT 4		●			
	S05	Input switch: INPUT 5 (JP/US/EU(Step-up) /IBD)		●			
	S06	Input switch: INPUT 6 (JP/US/EU(Step-up) /IBD)		●			
	S07	Input switch: INPUT 7 (JP/US)		●			
K			**MDU**	**MTB**			
KDD		Moving to function standby		●			
M			**MDU**	**MTB**			
MKC	S00	MASK off	●		Mod	●	
	S01	H ramp (slant 1) M	●		Mod	●	
	S02	H ramp (slant 4) M	●		Mod	●	
	S03	Slanting ramp M	●		Mod	●	
	S04	30 for aging	●		Mod	●	
	S05	05 for aging	●		Mod	●	
	S06	Erasing afterimage 1	●		Mod	●	
	S07	Erasing afterimage 2 (RGB: zigzag, V: reverse)	●		Mod	●	
	S08	White (change in luminance level)	●		Mod	●	
	S09	PEAK SEEK RASTER	●		Mod	●	
	S10	For engineering use	●		Mod	●	
MKS	S00	MASK off	●		Mod		
	S01	H ramp (slant 1)	●		Mod	●	
	S02	H ramp (slant 4)	●		Mod	●	
	S03	V ramp (slant 1)	●		Mod	●	
	S04	Slanting ramp	●		Mod	●	
	S05	Window (Hi= 870, Lo= 102)	●		Mod	●	
	S06	Window (Hi= 1023, Lo= 102)	●		Mod	●	
	S07	Window (Hi= 1023)	●		Mod	●	
	S08	Window (Hi= 1023) 4 %	●		Mod	●	
	S09	Window (Hi= 1023) 1.25 %	●		Mod	●	
	S10	Window (1/7 LINE)	●		Mod	●	
	S11	STRIPE (MGT/GRN)	●		Mod	●	
	S12	STRIPE (GRN/MGT)	●		Mod	●	
	S13	B & W, checker (1 line)	●		Mod	●	
	S14	B & W, checker (2 lines)	●		Mod	●	

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
M							
MKS	S15	B & W, checker (4 lines)	●		Mod	●	
	S16	B & W, checker (8 lines)	●		Mod	●	
	S17	COLOR BAR	●		Mod	●	
	S18	Slanting lines	●		Mod	●	
	S19	Red & black, checker (1 line)	●		Mod	●	
	S20	Red & black, checker (2 lines)	●		Mod	●	
	S21	Red & black, checker (4 ines)	●		Mod	●	
	S22	Red & black, checker (8 lines)	●		Mod	●	
	S23	RGB zigzag, V reverse	●		Mod	●	
	S24	SUS 2000 pulses (black raster)	●		Mod	●	
	S25	Window (Hi= 870, Lo= 102) Pattern 3	●		Mod	●	
	S26	Window (Hi= 1023, Lo= 102) Pattern 3	●		Mod	●	
	S27	Window (Hi= 1023) Pattern 3	●		Mod	●	
	S28	Window (Hi= 1023) 4 % Pattern 3	●		Mod	●	
	S29	Window (Hi= 1023) 1.25 % Pattern 3	●		Mod	●	
	S30	Window (1/7 LINE) Pattern 3	●		Mod	●	
	S31	Noise ON - White	●		Mod	●	
	S32	Noise ON - Red	●		Mod	●	
	S33	Noise ON - Green	●		Mod	●	
	S34	Noise ON - Blue	●		Mod	●	
	S35	Noise ON - Black	●		Mod	●	
	S36	For engineering use	●		Mod	●	
	S37	For engineering use	●		Mod	●	
	S38	For engineering use	●		Mod	●	
	S39	For engineering use	●		Mod	●	
	S51	Raster - White	●		Mod	●	
	S52	Raster - Red	●		Mod	●	
	S53	Raster - Green	●		Mod	●	
	S54	Raster - Blue	●		Mod	●	
	S55	Raster - Black	●		Mod	●	
	S56	Raster - Cyan	●		Mod	●	
	S57	Raster - Magenta	●		Mod	●	
	S58	Raster - Yellow	●		Mod	●	
	S59	RASTER09: Red 760	●		Mod	●	
	S60	RASTER10: Cyan 419	●		Mod	●	
	S61	RASTER11: Green 856	●		Mod	●	
	S62	RASTER12: Gray 313	●		Mod	●	
	S63	RASTER13: Gray 908	●		Mod	●	
	S64	RASTER14: Yellow egg color	●		Mod	●	
	S65	RASTER15: Beige	●		Mod	●	
	S66	RASTER16: Sky color	●		Mod	●	
	S67	RASTER17: Pale purple	●		Mod	●	
	S68	RASTER18: Magenta 54	●		Mod	●	
	S69	RASTER19: Red 1023+	●		Mod	●	
	S70	RASTER20: Green 1023+	●		Mod	●	
	S71	RASTER21: Blue 1023+	●		Mod	●	
	S72	RASTER22: Red 588+	●		Mod	●	
	S73	RASTER23: Green 588+	●		Mod	●	
	S74	RASTER24: Pale rose	●		Mod	●	

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
M							
MST	S00	Display one screen		●			
	S01	PsideP (Main size : normal)		●			
	S02	PinP (Right_down)		●			
	S03	PinP (Right_up)		●			
	S04	PinP (Left_up)		●			
	S05	PinP (Left_down)		●			
	S06	PsideP (Main size : center)		●			
	S07	PsideP (Main size : large)		●			
	S08	SWAP (Exchanging sub-screen)		●			
O			**MDU**	**MTB**			
OSD	S00	Turning OSD setting to off		●			
	S01	Turning OSD setting to on		●			
P			**MDU**	**MTB**			
PAV	S**	Switching panel functions interlocked with the AV selection	●				
PBH	***	Panel white balance adjustment - Blue highlight	●		Mod	●	
PBL	***	Panel white balance adjustment - Blue low light	●		Mod	●	
PDM	S00	Passing PD signals to the Power SUPPLY Unit => Power-down	●				
	S01	Not passing PD signals to the Power SUPPLY Unit => No power-down	●				
PFN		Factory mode: off	●			●	
PFS		Setup at shipment	●			●	
PFY		Factory mode: on	●			●	
PGH	***	Panel white balance adjustment - Green highlight	●		Mod	●	
PGL	***	Panel white balance adjustment - Green low light	●		Mod	●	
PGM	S**	Setting of the gamma table	●				
PMT	S00	Canceling panel muting	●				
	S01	Panel muting	●				
POF		Power off	●	●	Main		
PON		Power on	●	●	Main		
PPT	S00	Panel protection: off	●			●	
	S01	Panel protection: on	●			●	
PRH	***	Panel white balance adjustment - Red highlight	●		Mod	●	
PRL	***	Panel white balance adjustment - Red low light	●		Mod	●	
PUC	S00	Pure cinema: off	●	●		●	
	S01	Pure cinema: standard	●	●		●	
	S02	Pure cinema: advanced	●	●		●	
Q			**MDU**	**MTB**			
QAJ		Acquiring various adjustment values	●				
QIP		Acquiring various input signal data	●				
QMT		Acquiring temperature of MTB side and Fan speed		●			
QNG		Acquiring shut-down information of MTB side		●			
QPD		Acquiring logs of power-down points	●				
QPM		Acquiring data of the pulse meter	●				
QPW		Acquiring panel white balance adjustment values	●				
QS1		Acquiring unit data, such as the software version common to all models, regardless of destination	●	●			
QS2		Acquiring data on the status of the unit, such as temperature	●				
QS6		Acquiring unit data, such as the software version common to all models, regardless of destination		●			
QSD		Acquiring data on shutdown	●				

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
Q							
QSI		Acquiring data related with signals	●				
R			**MDU**	**MTB**			
RBL	S**	Setting of blue level for panel degradation correction	●		Mod	●	
RGL	S**	Setting of green level for panel degradation correction	●		Mod	●	
RHI	***	User white balance - Red highlight	●				
RLW	***	User white balance - Red low light	●				
RRL	S**	Setting of red level for panel degradation correction	●		Mod	●	
RSL	***	Adjustment of the Red side mask level		●		●	
RSW	***	Adjustment of the width of XY reset pulse 1	●		Mod	●	
RYW	***	Adjustment of the width of XY reset pulse 2	●		Mod	●	
S			**MDU**	**MTB**			
SDM	S00	Shutdown enabled	●				
	S01	Shutdown prohibited	●				
SFR	S01	Measures against AM radio noise - Pattern 1	●		Mod	●	
	S02	Measures against AM radio noise - Pattern 2	●		Mod	●	
	S03	Measures against AM radio noise - Pattern 3	●		Mod	●	
	S04	Measures against AM radio noise - Pattern 4	●		Mod	●	
	S05	Measures against AM radio noise - Pattern 5	●		Mod	●	
	S06	Measures against AM radio noise - Pattern 6	●		Mod	●	
	S07	Measures against AM radio noise - Pattern 7	●		Mod	●	
	S08	Measures against AM radio noise - Pattern 8	●		Mod	●	
SMM	S**	Setting of the effective area during streaking correction	●			●	
SN0	***	Setting of the serial No. 0 (panel)	●		Mod	●	
SN1	***	Setting of the serial No. 1 (panel)	●		Mod	●	
SN2	***	Setting of the serial No. 2 (panel)	●		Mod	●	
SN3	***	Setting of the serial No. 3 (panel)	●		Mod	●	
SN4	***	Setting of the serial No. 4 (panel)	●		Mod	●	
SZM	S00	Setting the screen size to Dot by Dot or PARTIAL		●			
	S01	Setting the screen size to 4 :3		●			
	S02	Setting the screen size to FULL or FULL1080i		●			
	S03	Setting the screen size to ZOOM		●			
	S04	Setting the screen size to CINEMA		●			
	S05	Setting the screen size to WIDE		●			
	S06	Setting the screen size to FULL 14 : 9		●			
	S07	Setting the screen size to CINEMA 14 : 9		●			
	S08	Setting the screen size to FULL1035		●			
T							
–		–					
U			**MDU**	**MTB**			
UAJ		Determining the flag for the DIGITAL Assy adjustment in "not adjusted"	●				
UP*		To add *** to the adjustment value (*** = 000 to 999, designated by a function command)		●			

Command Name		Function	Active U-com		Last Memory	Effective only in Factory mode	Remarks
			MDU	MTB			
V							
VFQ	S01	Setting the frequency in Mask mode to VD-48 Hz	●		Mod	●	
	S02	Setting the frequency in Mask mode to VD-50 Hz	●		Mod	●	
	S03	Setting the frequency in Mask mode to VD-60 Hz	●		Mod	●	
	S05	Setting the frequency in Mask mode to VD-72 Hz	●		Mod	●	
	S06	Setting the frequency in Mask mode to VD-75 Hz	●		Mod	●	
	S13	Setting the frequency in Mask mode to PC-60 Hz	●		Mod	●	
	S14	Setting the frequency in Mask mode to PC-70 Hz	●		Mod	●	
	S22	Setting the frequency in Mask mode to VD-50 Hz (nonstandard)	●		Mod	●	
	S23	Setting the frequency in Mask mode to VD-60 Hz (nonstandard)	●		Mod	●	
	S25	Setting the frequency in Mask mode to VD-72 Hz (nonstandard)	●		Mod	●	
	S26	Setting the frequency in Mask mode to VD-75 Hz (nonstandard)	●		Mod	●	
VOF	***	Adjustment of the reference value of Vofs voltage	●			●	
VOL	UP*, DW*, ***	To adjust the volume (to be used in combination with UP*/DW*)		●			
VRP	***	Adjustment of the reference value of Vrst-p voltage	●			●	
VSU	***	Adjustment of the reference value of Vsus voltage	●			●	
W							
WBI	S00	Panel WB standard output mode: off	●			●	
WBI	S01	Panel WB standard output mode: on	●			●	
X							
XSB	***		●		Mod	●	
Y							
YSB	***	Y-SUS-B ADJ	●		Mod	●	
YTB	***	Y-SUSTAIL T2 ADJ	●		Mod	●	
YTG	***	Y-SUSTAIL T1 ADJ	●		Mod	●	
YTW	***	Y-SUSTAIL W ADJ	●		Mod	●	
Z							
ZDT		Initializing the DTB FLASH		●		●	
ZME		Initializing the video EEPROM data		●		●	
ZPR		Initializing the setting data to which no adjustment command is provided	●			●	

9.3 OUTLINE OF COMMANDS

9.3.1 QS1

■ Acquisition of panel status • • • [QS1]

Model information and version information are returned.

Format	Effective Condition	Function	Remarks
[QS1]	Every time	Output of status	Reply Data : 105 Byte

Array		Size	Remarks
ECO		3	QS1 (Fixed)
1	Display Information 1	1	F
2	Display Information 2	1	7 : G7
3	Display Information 3	1	A : USA
4	Display Information 4	1	*
5	Display Information 5	1	B
6	MdUCon-Boot	3	01A
7	MdUcon-Prg	8	
8	Seq Prs-Boot	3	01A
9	Seq Prs-Prg	8	
10	SQ-VIDEO	4	
11	SQ-PC	4	
12	Panel Type	1	P/F
13	Reserved (*)	7	*******
14	, (Comma)	1	
15	MTB Information 1 (Generation)	1	7 : G7
16	MTB Information 2 (Regional model)	1	A : USA
17	MTB Information 3 (Grade)	1	H : Elite
18	MTB Information 4 (System Type)	1	B
19	Common Version for IF microcomputer.	4	
20	Common Version for Main microcomputer.	8	
21	Boot Version of Main microcomputer.	4	
22	Common Version for Multi-Processor.	8	
23	Boot Version of Multi-Processor.	4	
24	Reserved (*)	24	
25	Check Sum	2	FF

● MTB/MB-side's Information (15-24)	
IF uCON	Common Version of IF-uCON
Main uCon	Common Version of Main-uCON
Main uCon-Boot	Boot Version of Main-uCON
Multi-Pr s	Common Version of Multi-Processor Program.
Multi Prs-Boot	Boot Version of Multi-Processor Program.

1.Resolution/Inch Size	
3	1024*768/42
4	1024*768/43
5	1280*768/50
6	1365*768/50
7	1365*768/60
F	1920*1080/50

2. Panel Generation	
6	G6
7	G7
8	G8
9	G9
0	G10

● MTB/MB Generation	
6	G6
7	G7
8	G8
9	G9
0	G10

● Regional model	
J	JP
A	US
E	EU
G	GE
C	CH
U	AU

3. Grade	
*	Commonness
A	US (reserved)
E	EU (reserved)
J	Japan (reserved)

4. System Type	
*	Commonness
Z	Evaluation

● MTB/MB Product Form	
S	System model
B	One Body Model (SX)
M	Monitor (FHD)

● MTB/MB Grade	
H	Elite / DXA / Step-upD
T	Step-upA /XG / TXC / Re gula r (US)
B	Not used.(For Future)
S	Regular D
R	Regular A

● Panal Type	
P	the past
F	High-effective

● Panel Product Form	
S	System model
B	All-in-one design TV
M	Monitor
D	Standard module
E	Simple module

9.3.2 QS2

■ Acquisition of panel operation data • • • [QS2]

The command QS2 is for acquiring data on the panel's operational information.

Command Format	Effective Operation Modes	Function	Remarks
[QS2]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+23(DATA)+2(CS)= 28 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QS2
1	Notification of mode shifting to STB	1 Byte	1
2	Flag for adjustment of the main unit	1 Byte	0
3	Flag for adjustment-data backup	1 Byte	0
4	"1st PD" data	1 Byte	0
5	"2nd PD" data	1 Byte	0
6	Still picture detection	1 Byte	0
7	Reserved	2 Byte	**
8	Temperature data (TEMP 1)	3 Byte	128 (*1)
9	SD main data	1 Byte	0
10	SD sub data	1 Byte	0
11	Operation status induced by SD	1 Byte	0
12	Data from the hour meter	8 Byte	00000259 (*2)
13	MASK indication	1 Byte	0
CS		2 Byte	4A

Note : (*1) : The unit scale is centigrade. The data is A/D value from the thermal sensor.
(*2) : "00000259" of "Data from the hour meter" means 2 hours 59 minuts.

1: Notification of mode shifting to Standby	
0	Entering Standby mode failed
1	Entering Standby mode succeeded

2: Adjustment of the main unit	
0	Adjustment completed
1	Adjustment not completed

3: Adjustment-data backup	
0	With backup data
1	No data (default)

4, 5: PD data	
0	No PD data
1	Not used
2	POWER
3	SCAN
4	SCN-5V
5	Y-DRV
6	Y-DCDC
7	Y-SUS
8	ADRS
9	X-DRV
A	X-DCDC
B	X-SUS
C	Not used
D	Not used
E	Not used
F	UNKNOWN

6: Still picture detection	
0	Normal screen
1	Still picture

9: SD main data	
0	No SD
1	SQ-IC
2	MDU-IIC
3	RST2
4	TEMP

10-1: SD-Sub (SQ-IC)	
0	No SD-Sub data
1	Communication error
2	Drive stop
3	BUSY
6	Version mismatching

10-2: SD-Sub (IIC)	
0	No SD-Sub data
1	EEPROM
2	BACKUP
3	DAC

10-3: SD-Sub (TEMP)	
0	No SD-Sub data
1	TEMP1
2	Reserved

11: Operation status induced by SD	
0	Normal
1	Relay-off completed
2	During warning indication

13: MASK indication	
0	MASK-OFF
1	MASK-ON

9.3.3 QIP

■ Acquisition of other data on the panel • • • [QIP]

The command QIP is for acquiring data on operational information of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QIP]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+58(DATA)+2(CS)= 63 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QIP
1	SERIAL	15 Byte	- - - - - - - - - - - - - - -
2	HOUR METER	8 Byte	00000000
3	TOTAL HOUR METER	8 Byte	00000000
4	PON COUNTER	8 Byte	00000000
5	TEMP1 acquisition (Temperature value)	5 Byte	+23.5(*)
6	TEMP0 acquisition (Temperature value)	5 Byte	+28.7(*)
7	MAX-TEMP1 acquisition (Temperature value)	5 Byte	+78.3(*)
8	Reserved	4 Byte	****
CS		2 Byte	94

(*) : Centigrade scale

9.3.4 QAJ

■ Acquisition of panel adjustment data (common data) • • • [QAJ]

The command QAJ is for acquiring the panel's factory-preset data.

Command Format	Effective Operation Modes	Function	Remarks
[QAJ]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+41(DATA)+2(CS)= 46 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QAJ
1	V-SUS adjustment value	3 Byte	128
2	V-OFT adjustment value	3 Byte	128
3	V-RST-P adjustment value	3 Byte	128
4	Reserved	3 Byte	***
5	XSB adjustment value	3 Byte	128
6	YSB adjustment value	3 Byte	128
7	YTG adjustment value	3 Byte	128
8	YTW adjustment value	3 Byte	128
9	RSW adjustment value	3 Byte	128
10	YTB adjustment value	3 Byte	128
11	RYW adjustment value	3 Byte	128
12	R-REVICE setting value	1 Byte	0
13	G-REVICE setting value	1 Byte	0
14	B-REVICE setting value	1 Byte	0
CS		2 Byte	B7

• For each REVICE setting value, the level set for RRL, RGL, or RBL is transmitted as one character.

9.3.5 QPW

■ Acquisition of ABL/WB adjustment data • • • [QPW]

The command QPW is for acquiring the factory-preset data about the video of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QPW]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+35(DATA)+2(CS)= 40 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QPW
1	Drive sequence	3 Byte	60V
2	Standard/nonstandard	1 Byte	S
3	Type of ABL/WB tables	2 Byte	T2
4	ABL adjustment value	3 Byte	128
5	R-HIGH adjustment value	3 Byte	256
6	G-HIGH adjustment value	3 Byte	256
7	B-HIGH adjustment value	3 Byte	256
8	R-LOW adjustment value	3 Byte	512
9	G-LOW adjustment value	3 Byte	512
10	B-LOW adjustment value	3 Byte	512
11	Gamma setting	1 Byte	A
12	Streaking correction	1 Byte	1
13	Peripheral luminance correction	1 Byte	0
14	Reserved	1 Byte	*
15	WB interlocked with APL	1 Byte	0
16	Transition of protective operations	1 Byte	0
17	Reserved	2 Byte	**
CS		2 Byte	37

1: Drive sequence

48V	Video 48 Hz
50V	Video 50 Hz
60V	Video 60 Hz
72V	Video 72 Hz
75V	Video 75 Hz
60P	PC 60 Hz
70P	PC 70 Hz

2: Standard/ nonstandard

S	Standard
N	Nonstandard

3: Type of ABL/WB tables

Tn	n: 1 to 4

11: Gamma setting

n	0 to F

12, 15: Setting for Items 12 and 15

0	OFF
1	ON

13: Peripheral luminance correction

0	OFF
2	ON (interlocked with APL)

16: Transition of brightness by protective operations

0	Upper limit state for brightness
1	Brightness being reduced
2	Lower limit state for brightness
3	Brightness being increased

9.3.6 QPM

■ Acquisition of pulse meter value • • • [QPM]

The command QPM is for acquiring the accumulated number of pulses of the panel.

Command Format	Effective Operation Modes	Function	Remarks
[QPM]	All operations	To acquire data on operations of the panel	Return data: 3 (ECO)+40(DATA)+2(CS)= 45 Byte

Data Arrangement		Data Length	Output Example
ECO		3Byte	QPM
1	Pulse meter B 1	8Byte	00000000
2	Pulse meter B 2	8Byte	00000000
3	Pulse meter B 3	8Byte	00000000
4	Pulse meter B 4	8Byte	00000000
5	Pulse meter B 5	8Byte	00000000
CS		2Byte	E7

9.3.7 QPD

■ Acquisition of PD logs • • • [QPD]

The command QPD is for acquiring data from the 8 latest power-down (PD) logs.

Command Format	Effective Operation Modes	Function	Remarks
[QPD]	All operations	To acquire data on the power-down logs	Return data: 3 (ECO)+80(DATA)+2(CS)= 85 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QPD
1	Latest "1st PD" data	1 Byte	A
2	Latest "2nd PD" data	1 Byte	2
3	Data from the hour meter for the latest PD	8 Byte	00010020
4	Second latest "1st PD" data	1 Byte	E
5	Second latest "2nd PD" data	1 Byte	9
6	Data from the hour meter for the second latest PD	8 Byte	00008523
7	Third latest "1st PD" data	1 Byte	4
8	Third latest "2nd PD" data	1 Byte	3
9	Data from the hour meter for the third latest PD	8 Byte	00004335
10	Fourth latest "1st PD" data	1 Byte	2
11	Fourth latest "2nd PD" data	1 Byte	0
12	Data from the hour meter for the fourth latest PD	8 Byte	00000945
13	Fifth latest "1st PD" data	1 Byte	4
14	Fifth latest "2nd PD" data	1 Byte	0
15	Data from the hour meter for the fifth latest PD	8 Byte	00000715
16	Sixth latest "1st PD" data	1 Byte	A
17	Sixth latest "2nd PD" data	1 Byte	2
18	Data from the hour meter for the sixth latest PD	8 Byte	00000552
19	Seventh latest "1st PD" data	1 Byte	A
20	Seventh latest "2nd PD" data	1 Byte	0
21	Data from the hour meter for the seventh latest PD	8 Byte	00000213
22	Eighth latest "1st PD" data	1 Byte	D
23	Eighth latest "2nd PD" data	1 Byte	0
24	Data from the hour meter for the eighth latest PD	8 Byte	000001A7
CS		2 Byte	27

1, 2, 4, 5: PD data	
0	No PD
1	Not used
2	P-POWER
3	SCAN
4	SCN-5V
5	Y-DRIVE
6	Y-DCDC
7	Y-SUS
8	Address
9	X-DRIVE
A	X-DCDC
B	X-SUS
C	Not used
D	Not used
E	Not used
F	UNKNOWN

9.3.8 QSD

■ Acquisition of SD logs • • • [QSD]

The command QSD is for acquiring the data from the 8 latest shutdown (SD) logs.

Command Format	Effective Operation Modes	Function	Remarks
[QSD]	All operations	To acquire data on the shutdown logs	Return data: 3 (ECO)+80(DATA)+2(CS)= 85 Byte

Data Arrangement		Data Length	Output Example
ECO		3Byte	QSD
1	Latest SD data	1byte	1
2	Latest SD subcategory data	1byte	0
3	Data from the hour meter for the latest SD	8byte	00752013
4	Second latest SD data	1byte	5
5	Second latest SD subcategory data	1byte	0
6	Data from the hour meter for the second latest SD	8byte	00495204
7	Third latest SD data	1byte	2
8	Third latest SD subcategory data	1byte	3
9	Data from the hour meter for the third latest SD	8byte	00100355
10	Fourth latest SD data	1byte	2
11	Fourth latest SD subcategory data	1byte	5
12	Data from the hour meter for the fourth latest SD	8byte	00075620
13	Fifth latest SD data	1byte	1
14	Fifth latest SD subcategory data	1byte	0
15	Data from the hour meter for the fifth latest SD	8byte	00000852
16	Sixth latest SD data	1byte	2
17	Sixth latest SD subcategory data	1byte	5
18	Data from the hour meter for the sixth latest SD	8byte	000000451
19	Seventh latest SD data	1byte	0
20	Seventh latest SD subcategory data	1byte	0
21	Data from the hour meter for the seventh latest SD	8byte	00000000
22	Eighth latest SD data	1byte	0
23	Eighth latest SD subcategory data	1byte	0
24	Data from the hour meter for the eighth latest SD	8byte	00000000
CS		2Byte	7D

● SD data	
0	No SD
1	SQ-IC
2	MDU-IIC
3	RST2
4	TEMP

● SD subcategory (SQ-IC)	
0	No SD-Sub data
1	Communication error
2	Drive stop
3	BUSY
6	Version mismatching

● SD subcategory (MDU-IIC)	
0	No SD-Sub data
1	EEPROM
2	BACKUP
3	DAC

● SD subcategory (TEMP)	
0	No SD-Sub data
1	TEMP1
2	Reserved

9.3.9 QS6

QS6 : Returning information of the Flash Device.

Format	Effective Condition	Function	Remarks
[QS6]	Every time	Output of status	

Order	Data	Size	Context
0	Received Command Name	3 byte	'QS6' only
01	Hardware Version of DTV	8 byte	
02	Hardware Serial of DTV	8 byte	
03	Runtime Version of DTV	8 byte	
04	CFE Version	8 byte	
05	KERNEL Version	8 byte	
06	ROOTFS Version	8 byte	
07	FLAGS Information 1	1 byte	
08	FLAGS Information 2	1 byte	
09	FLAGS Information 3	1 byte	
10	FLAGS Information 4	1 byte	
11	FLAGS Information 5	1 byte	
12	FLAGS Information 6	1 byte	
13	Version of CCD-UCOM	4 byte	
14	HMG/HG MODELE Version	10byte	
15	User Password	4 byte	
16	Check Sum	2 byte	

9.3.10 QSI

■ Acquisition of input signal data • • • [QSI]

The command QSI is for acquiring all data on input video signals.

Command Format	Effective Operation Modes	Function	Remarks
[QSI]	All operations	To acquire all data on input video signals	Return data: 3 (ECO)+66(DATA)+2(CS)= 71 Byte

Data Arrangement		Data Length	Output Example
ECO		3 Byte	QSI
1	Type of drive sequence	3 Byte	60V
2	Standard/nonstandard	1 Byte	S
3	Type of ABL/WB tables	2 Byte	T1
4	Total value of PCN	4 Byte	0256
5	Total value of PRH	4 Byte	0256
6	Total value of PGH	4 Byte	0256
7	Total value of PBH	4 Byte	0256
8	Total value of PBR	4 Byte	0512
9	Total value of PRL	4 Byte	0512
10	Total value of PGL	4 Byte	0512
11	Total value of PBL	4 Byte	0512
12	Total value of ABL	3 Byte	128
13	Detection of V frequency	4 Byte	6002
14	Detection of existence of H	1 Byte	Y
15	Reserved	3 Byte	***
16	Obtained APL data	4 Byte	1023
17	Number of SUS pulses	4 Byte	0457
18	Result of detection of still picture	1 Byte	1
19	Result of detection of cracking in the panel	1 Byte	1
20	Result of detection for scanning protection	1 Byte	1
21	Result of detection for external protection	1 Byte	1
22	Transition of protection operation	1 Byte	0
23	Reserved	4 Byte	****
CS		2 Byte	27

14: Detection of existence of H	
N	No H
Y	H detected

18 to 20: Each protection operation status	
0	Setting OFF
1	Setting ON (waiting)
2	Setting ON (during operation)

22: Transition of brightness by protection operation	
0	Upper limit state for brightness
1	Brightness being reduced
2	Lower limit state for brightness
3	Brightness being increased

9.3.11 QMT

QMT : Returning information of temperature and FAN speed.

Format	Effective Condition	Function	Remarks
[QMT]	Every time	Output of status	MTB-side's temperature/FAN rotaing status

Order	Data	Size	Context
0	Received Command Name	3 byte	'QMT' only
1	MTB Temperature	3 byte	
2	MTB FAN Speed	1 byte	0: STOP 1:LOW 2:HIGH
3	Cjheck Sum	2 byte	

9.3.12 QNG

QNG : Returning data (logs keep on Main microcomputer) on shutdown of Multi-Tuner Base.

Format	Effective Condition	Function	Remarks
[QNG]	Every time	Output of status	

Order	Data	Size	Context
0	Received Command Name on MTB	3 byte	'QNG' only
01	Latest NR data	1 byte	
02	Data of subcategory for the latest NG	1 byte	
03	Data of MTB hour meter for the latest NG	7 byte	
04	Data of temperature for the latest NG	3 byte	
05	2'st latest NG data	1 byte	
06	Data of subcategory for the 2'st latest NG	1 byte	
07	Data of MTB hourmeter for the 2'st latest NG	7 byte	
08	Data of temperature for the 2'st latest NG	3 byte	
09	3rd latest NG data	1 byte	
10	Data of subcategory for the 3rd latest NG	1 byte	
11	Data of MTB hourmeter for the 3rd latest NG	7 byte	
12	Data of temperature for the 3rd latest NG	3 byte	
:	:	:	
29	8'st latest NG data	1 byte	
30	Data of subcategory for the 7'st latest NG	1 byte	
31	Data of MTB hour meter for the 7'st latest NG	7 byte	
32	Data of temperature for the 7'st latest NG	3 byte	

■Details of Data and subcategory

<SD Information No.>		
Data	Cause of shutdown	Remarks
0	Normal	
1	failure of communication to Module microcomputer	MODULE (immediately Shutdown)
2	3-wire serial communication of Main microcomputer	Go to subcategory ⇒ No.1
3	IIC communication failure of Main microcomputer & Unknown error	Go to subcategory ⇒ No.2
4	communication failure of Main microcomputer	MAIN (immediately Power Supply OFF)
5	FAN stopped	FAN (immediately Power Supply OFF)
6	Abnormally high temperature at MTB.	TEMP2 (After 30second warning, ture Power Supply off)
7	failure of Digital Tuner	Go to subcategory ⇒ No.3
8	failure of Power Supply	Go to subcategory ⇒ No.4
B	Speaker short-circuit	After 3 second warning, turn the Power Supply OFF.

<No.1 Subcategory Information on "failure in 3-wire serial communication of Main microcomputer">		
Data	Cause of shutdown	Remarks
0	Non subcategory	
1	IF microcomputer communication failure	IF (immediately Power Supply OFF)
2	MANTA communication failure (MULTI1)	MULTI1 (immediately Power Supply OFF)
4	MANTA communication failure (I/P)	I/P
5	MANTA communication failure (D-SEL)	D-SEL

<No.2 Subcategory Information on "failure in IIC communication of Main mircocomputer">		
Data	Cause of shutdown	Remarks
0	Non subcategory	
1	Analog Tuner 1 (Front End 1)	FE1 (immediately Power Supply OFF)
2	Analog Tuner 2 (Front End 2)	FE2 (immediately Power Supply OFF)
3	MPX	
4	AV Switch	AV-SW (immediately Power Supply OFF)
5	RGB Switch	RGB-SW (immediately Power Supply OFF)
6	CCD	CCD (immediately Power Supply OFF)
8	Main VDEC	M-VDEC (immediately Power Supply OFF)
A	AD/PLL	ADC (immediately Power Supply OFF)
B	HDMI	HDMI (immediately Power Supply OFF)
G	64k EEPROM	MA-FEP (immediately Power Supply OFF)
H	AUDIO IC	

<No.3 Subcategory Information on "Digital Tuner">		
Data	Cause of shutdown	Remarks
0	Non subcategory	
1	Failure to DTB Starting	PS/RST (immediately Power Supply OFF)
3	DTV Device Error	Device (immediately Power Supply OFF)
5	TV-Guide Error	TV-G (immediately Power Supply OFF)
7	Home Gallery Application comunication error.	HOME-G (communication error (Retry 16 times) →Do not return after 2 times of soft reset)

<No.4 Subcategory Information on "POWER">		
Data	Cause of shutdown	Remarks
1	DCDC Converter Power Supply reduced	M-DCDC (immediately Power Supply OFF)
2	Relay Power Supply reduced	RELAY (immediately Power Supply OFF)

9.3.13 DRV

■ **DRV**

Drive ON/OFF : ON/OFF control for only the large-power system

Format	Effective Condition	Function	Remarks
[DRV+S00]	Every time	DRIVE OFF	At standby mode, when 10 seconds passed after issuing [DRV+S00], command becomes invalid.
[DRV+S01]		DRIVE ON	

9.3.14 COMMANDS FOR PROHIBITION/PERMISSION OF DTV/HOMENET COMMUNICATION

■ Commands for prohibition/permission of DTV/HomeNet communication

Control device: DTV & HomeNet
Memory: ON/OFF of DTV communication prohibition mode
Applicable models: Only for models for North America

■ Functions

This is a command for forcibly prohibiting communication with DTV (for Elite series panels, communication using HomeNet is included).

Normally, after the panel and the connected DTV are turned on, any operation is prohibited on the panel until startup of the DTV is completed. However, on the production line, to avoid a drain on productivity, such waiting time must be shortened. Thus, for the processes where the DTV is not necessary, such as panel adjustment, the existence of the DTV can be ignored, to shorten waiting time.

■ Commands

DTN	S00	To exit DTV/HomeNet Communication
	S01	To enter DTV/HomeNet Communication

■ Operations

[DTNS01]
<Effective operation mode>
Factory Operation mode
Note: This command must be effective even if the Assy is used alone or installed in the unit.

- Having entered DTV/HomeNet Communication Prohibition mode must be stored in memory.
- The blue LED flashes rapidly to indicate that DTV/HomeNet Communication Prohibition mode is active.

- The next resetting of the main microcomputer is canceled, the main microcomputer judges that DTNS01 is established, then communication with DTV/HomeNet will be prohibited. In such a case, any user operations (FAY command, etc.) entered immediately after the unit is turned on must be effective. Also, any operations other than DTV/HomeNet operations must be effective in the same way as during DTNS00.

[DTNS00]
<Effective operation mode>
Factory Operation mode
Note: This command must be effective even if the Assy is used alone or installed in the unit.

- Having entered DTV/HomeNet Communication Permission mode must be stored in memory.
- It is not necessary to immediately restore communication with DTV/HomeNet. DTV/HomeNet communication must be restored until resetting of the main microcomputer is canceled next time.

■ Supplement

- While ZACS01 is established, the LED for ZAC flashes. The priority of LED indications is as follows:
  PD > Trap-SW > DTV_STB > SD > ZAC >DTN > no backup copy > Standalone operation of the Assy > Normal ON/OFF
- Even if DTNS00 is established, if ZACS01 is established, DTV/HomeNet communication must be prohibited.

9.3.15 OTHER COMMANDS

■ Setting for Factory mode permission/prohibition • • • [FAY/FAN]

The commands FAY/FAN are for prohibiting/permitting panel-adjustment commands.

Command Format	Operation		Remarks
	Effective Operation Modes	Control	
[FAY]	Normal operation mode while the power is on	Adjust command is valid.	Mask indications will be forcibly turned off.
[FAN]	During FAY	Adjust command is invalid.	

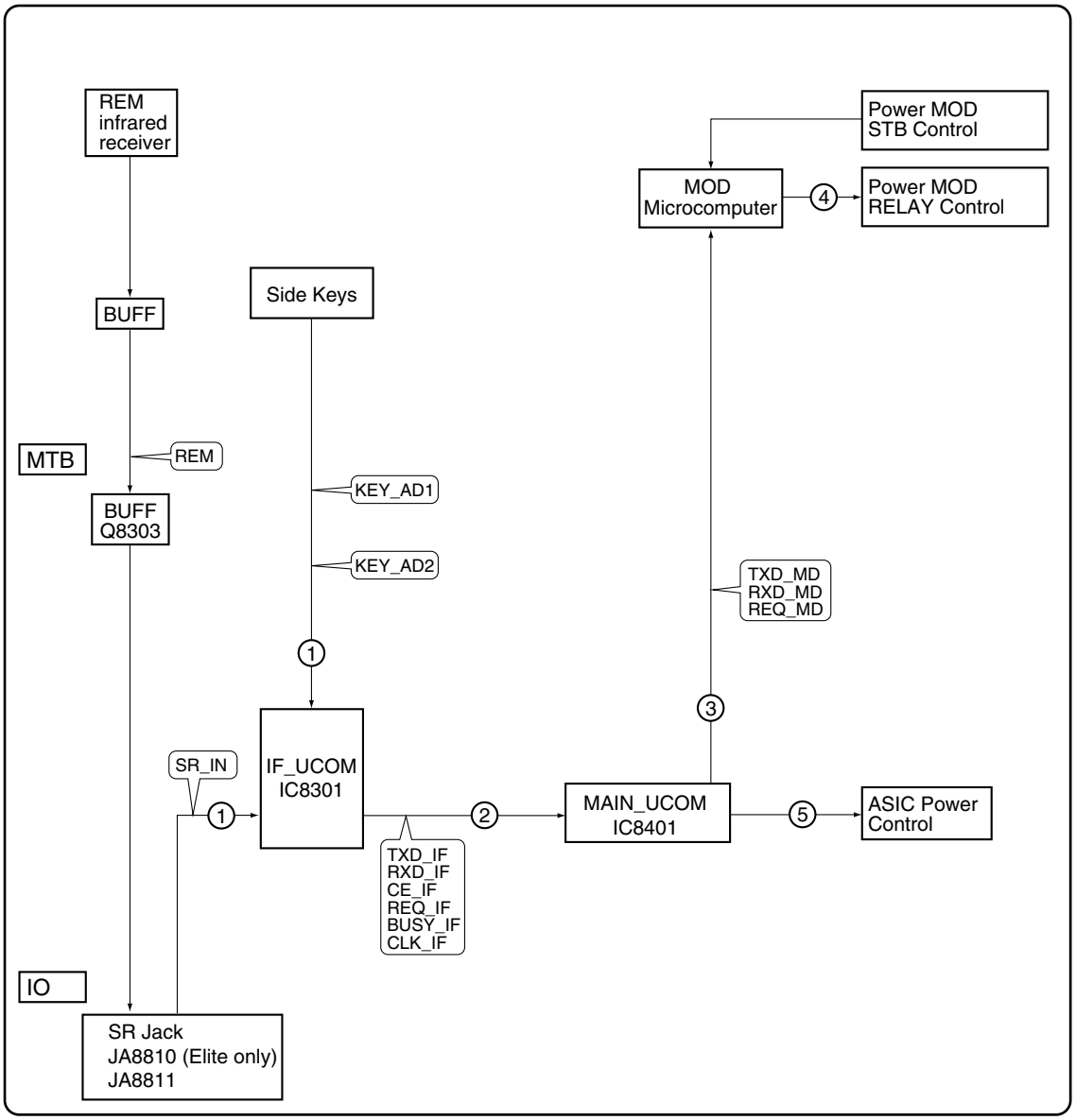
■ Backup function for adjustment values for the main unit • • • [FAJ/UAJ/CBU/BCP]

When the DIGITAL Assy is to be replaced, adjustment values can be copied from the backup EEPROM to the EEPROM of the Assy for service.

Command Format	Operation			Remarks
	Effective Operation Modes	Control		
[FAJ]	During FAY	To make the flag setting that indicating that adjustment of the panel unit has been completed	Writing 00 to the 4 k byte ROM and copying to the 2 k byte ROM	This takes at least 350 ms.
[UAJ]		To make the flag setting that indicating that adjustment of the main unit has not been completed	Writing F0 to the 4 k byte ROM	
[CBU]		To make the flag setting that indicating that backup data have not been copied	Writing F0 to the 2 k byte ROM	The backup ROM is initialized.
[BCP]		To copy Digital backup data to EEPROM	Copying backup data	

10. GENERAL INFORMATION

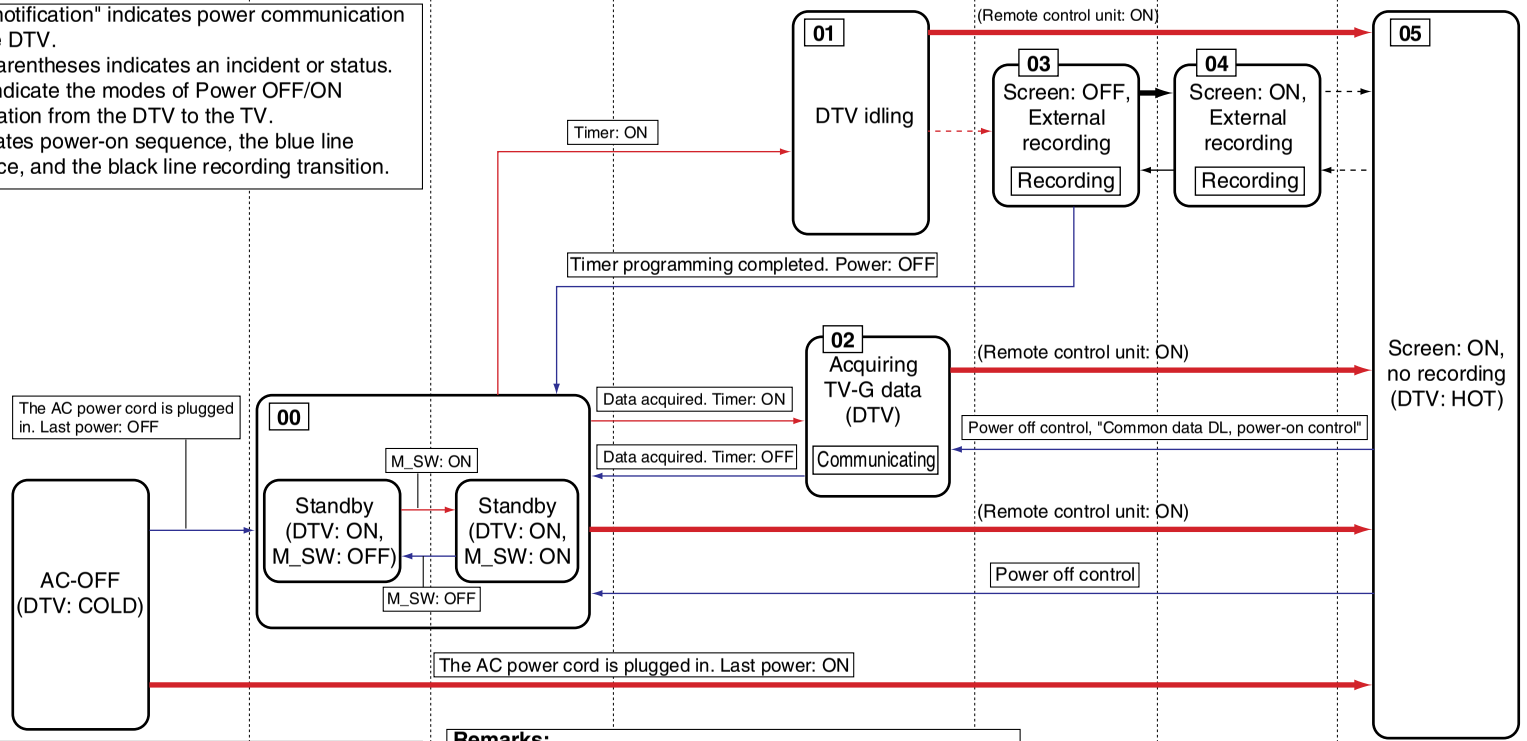
10.1 POWER ON SEQUENCE



① : The remote control (or KEY) signal is input to the IF microcomputer.
② : The IF microcomputer sends the operation data to the main microcomputer.
③ : The main microcomputer issues a startup command (PON) to the MOD microcomputer.
④ : The MOD microcomputer controls the relay of the power MOD of the PDP to startup the power of the PDP.
⑤ : The main microcomputer controls the ASIC power within the MTB to startup the power of the MTB.

	AC-OFF (AC power cord unplugged)	DTV Active (M_SW: OFF)	DTV Active (M_SW: ON)			Fully Active	
Power LED	OFF	OFF	Standby (red LED)			Power ON (blue LED)	
PDP	OFF	OFF	OFF	OFF	OFF	ON (PDP indication)	
PSW1	OFF	OFF	OFF	OFF	OFF	ON (VDEC & ASIC ON)	
Power control	OFF	OFF (POF)	OFF (POF)	OFF (POF)	OFF (POF)	PON (DTV+AV_ON)	
Main microcomputer	OFF	ON	ON	ON (main microcomputer ON)			
IF microcomputer	OFF	ON	ON	ON (IF microcomputer ON)			
DTV	(Power interrupted: COLD)		WARM		External recording: WARM	Recording: HOT	HOT

- "Power ON/OFF notification" indicates power communication from the TV to the DTV.
- A description in parentheses indicates an incident or status.
- Boxed numbers indicate the modes of Power OFF/ON completion notification from the DTV to the TV.
- The red line indicates power-on sequence, the blue line power-off sequence, and the black line recording transition.



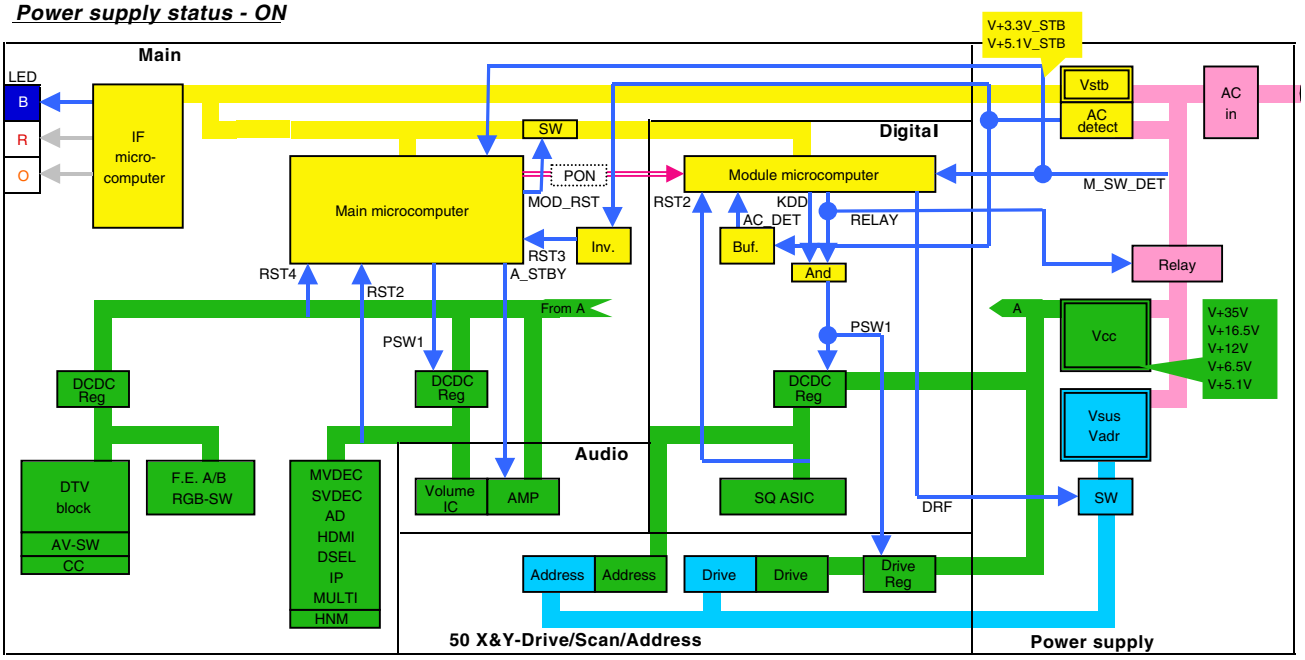
- If a timer recording is programmed to be started within 2 minutes after another timer recording is finished, the numbers change 05, 04, then 05, in that order.
- If several timer recordings are programmed consecutively, the number remains 03, and only the locked channel numbers change.
- While M_SW_DET is off, the transitions from 01 to 05, 01 to 03, and 02 to 05 are prohibited.

Remarks:
- The main microcomputer manages last power ON/OFF.
- Standby comprises Function Standby and Timer Standby.

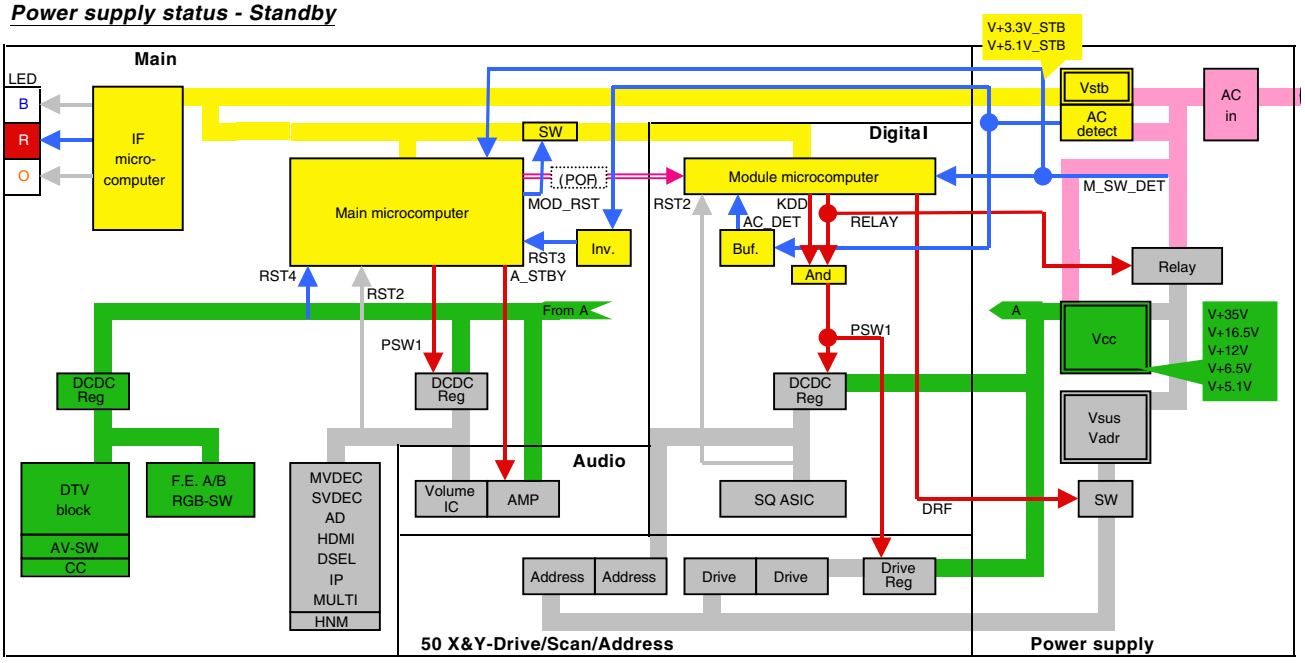
03: Acquiring data
- Acquiring SI data
- Acquiring logo data
- Acquiring TV-GUIDE data
- Acquiring clock data (TOT)

: Spontaneous internal transition
: Spontaneous internal transition
: Power interrupted
: Only the screen is off
: Reset start
: Screen power on
: Screen power on

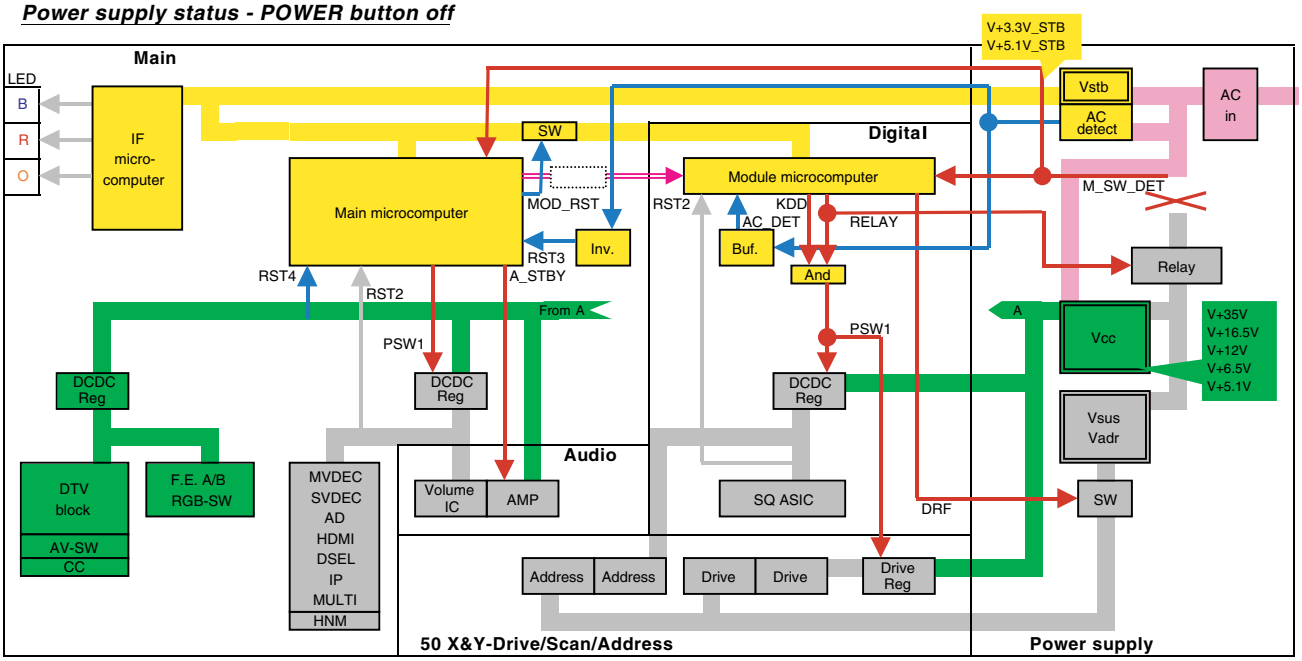
Power supply status - ON



Power supply status - Standby

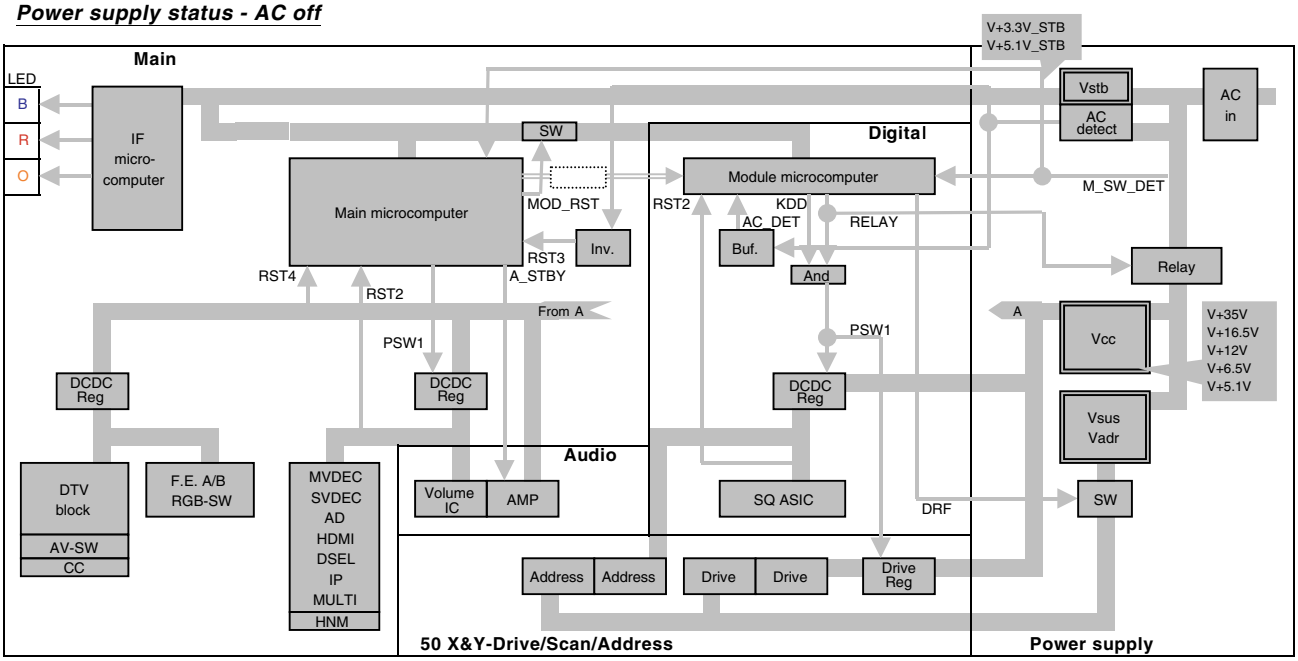


Power supply status - POWER button off



This state of the power supply is the same as the Standby mode.
However, all LED is turned off, and the operation by the user is not effective.

Power supply status - AC off



10.3 POWER ON/OFF FUNCTION FOR THE LARGE-SIGNAL SYSTEM

Function: It is an operational mode where the digital signal processing performs circuit operation but the power is not supplied to the panel driving system (large signal system) in order to avoid a power down.

Application:

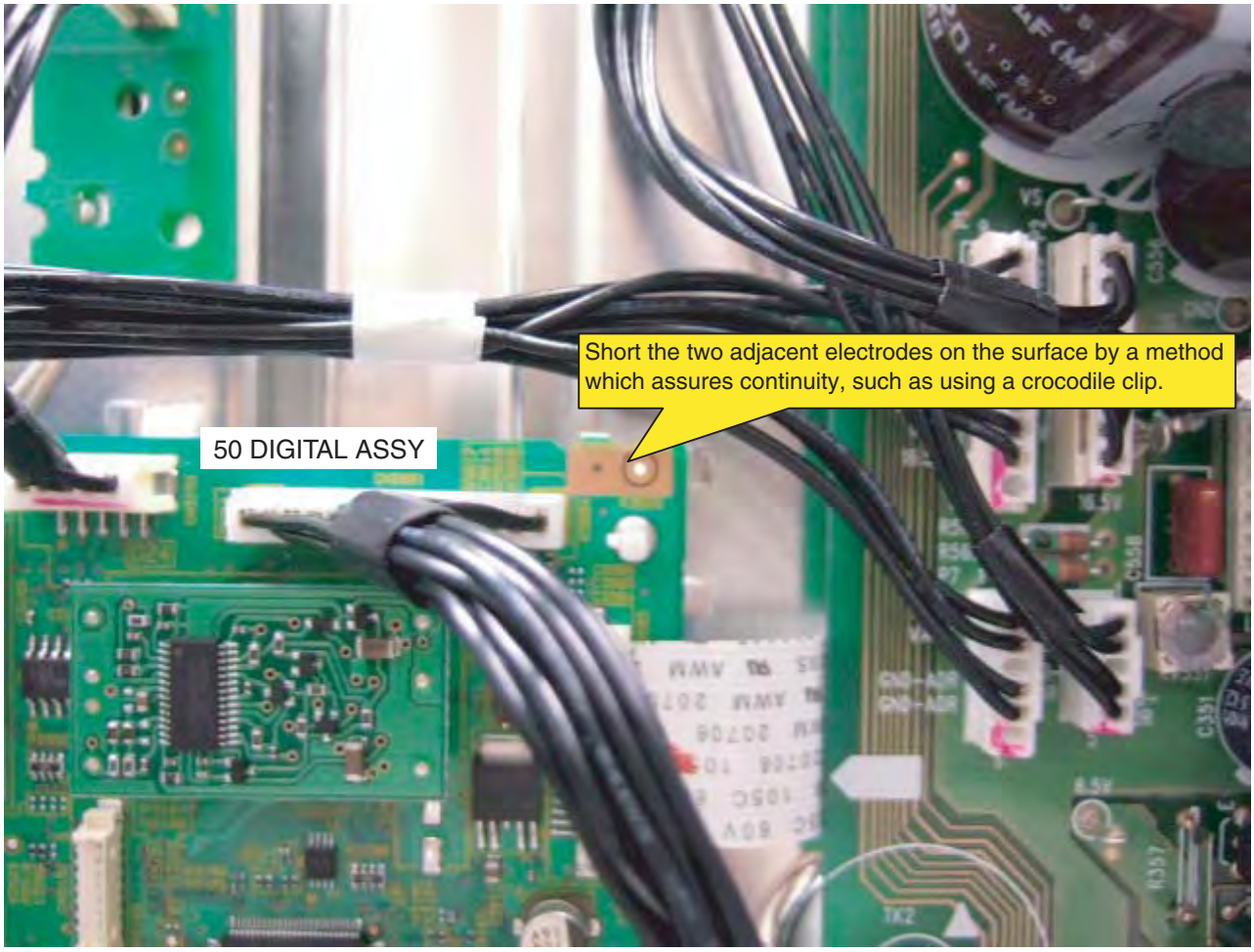
1. When it is necessary to check whether the signal output is correctly reaching the drive system in a repairing activity etc.
2. In the case of a PD, to determine whether the problem is with the large signal system power supply or with the small signal system power supply.

Method:

1. Make shorting between the specified location (refer to the illustration below) of the PCB surface of the 50 DIGITAL ASSY and the nearby pattern.
2. Execute [DRV S00] by RS232C command. ([DRV S01] for release)

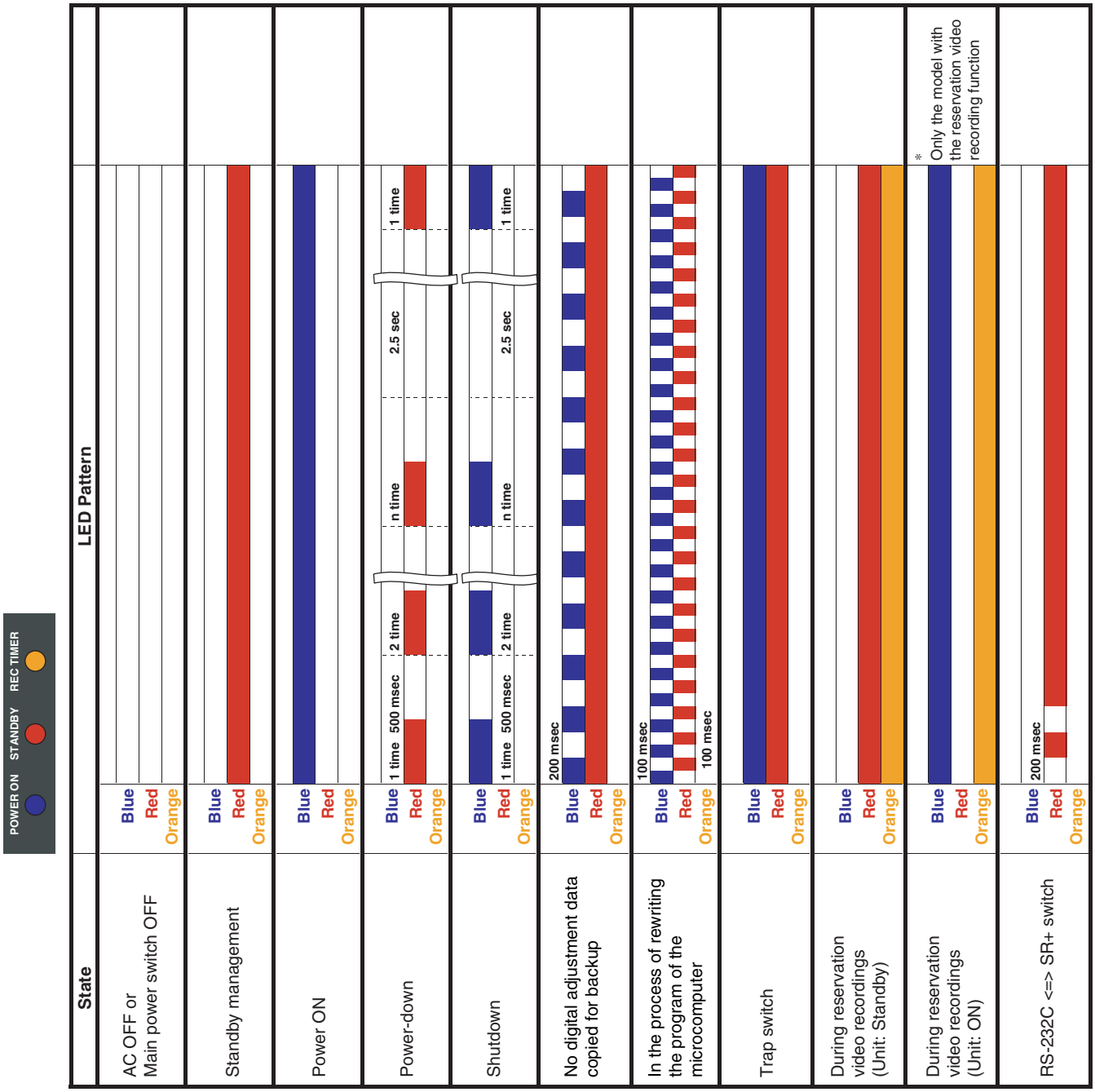
Supplemental explanation:

- When the large signal system power supply is in OFF state, there will be no PD, except PS_PD, as the PD signal has been muted.
- If the clip is removed in the OFF state of the large signal system power supply, PD will take place at the instance of clip removal. Therefore, be sure to remove the clip after turning the power OFF.
- Under RS232C command control, [DRVS01] (release) is possible during power ON. However, there is a possibility of damaging the set. Therefore, make this operation only after turning the power OFF.
- Command [DRVS00/S01] is effective even during standby. When the main power is turned OFF, however, [DRVS01] (release) will be effective.


Short the two adjacent electrodes on the surface by a method which assures continuity, such as using a crocodile clip.
50 DIGITAL ASSY

10.4 LED INFORMATION

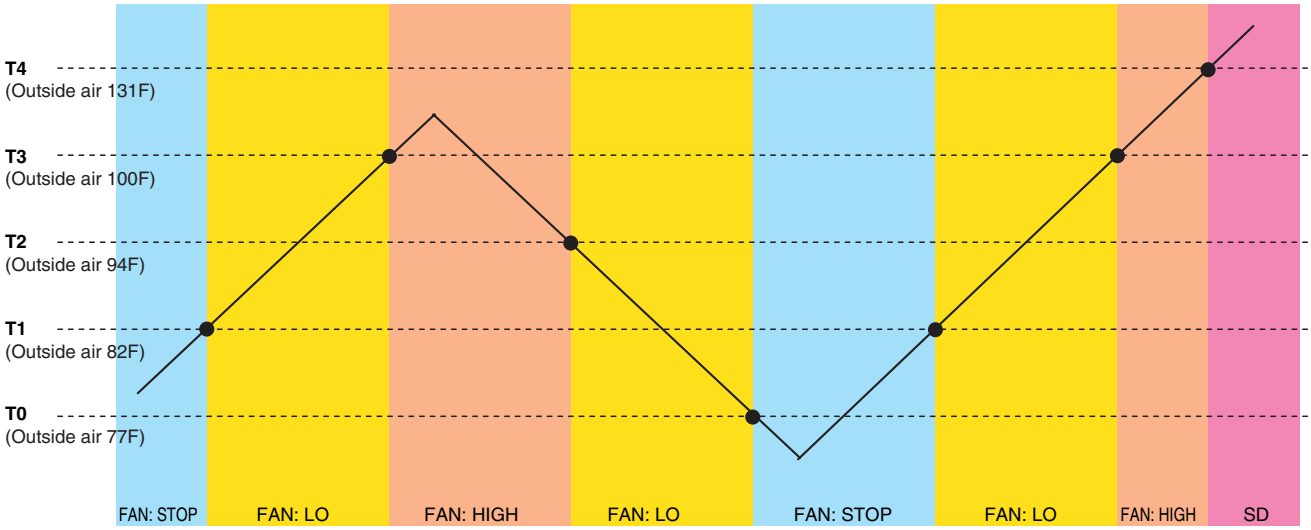
LED Pattern



10.5 SPECIFICATION ABOUT THE THERMAL PROTECTION

* The change of HI / LO have hysterisis curve below.

Reading Value of The Sensor and FAN Drive.



Assign			AD Value 10bit	AD Value 8bit	Sensor Temp.	Aims (Outside Air)	
Pin 76	TEMP2	T4 setting	424	106	268F	131F	SD
		T3 setting	566	142	104F	100F	Low → High
		T2 setting	601	150	97F	94F	High → Low
		T1 setting	653	163	86F	82F	STOP → Low
		T0 setting	679	170	80F	77F	Low → STOP

Operation when executing FAN control command

When executing [FCNS00], [FCNS01], [FCNS02] command, detect the FAN_NG signal. When NG is detected, it becomes shutdown. When [FCNS03] command is executed, FAN_NG detection is not operated.

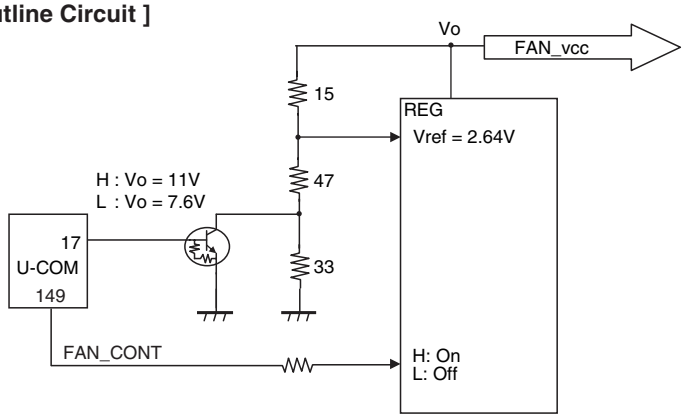
Assign	FAN: HIGH	FAN: LO	OFF
Pin 149 (FAN_CONT)	H	H	L
Pin 17 (FAN_CONT_POW)	H	L	–

This model control the FAN drive by pin 149 (FAN ON / OFF) and pin 17 (Change of FAN control voltage) of MAIN U-com.

Set State and FAN Drive

Power	PSW1	State	Control	Fan Operation
ON OFF	ON	ON STB	According to the reading value of above table sensor. FAN_CONT: "L"	HIGH or LO OFF

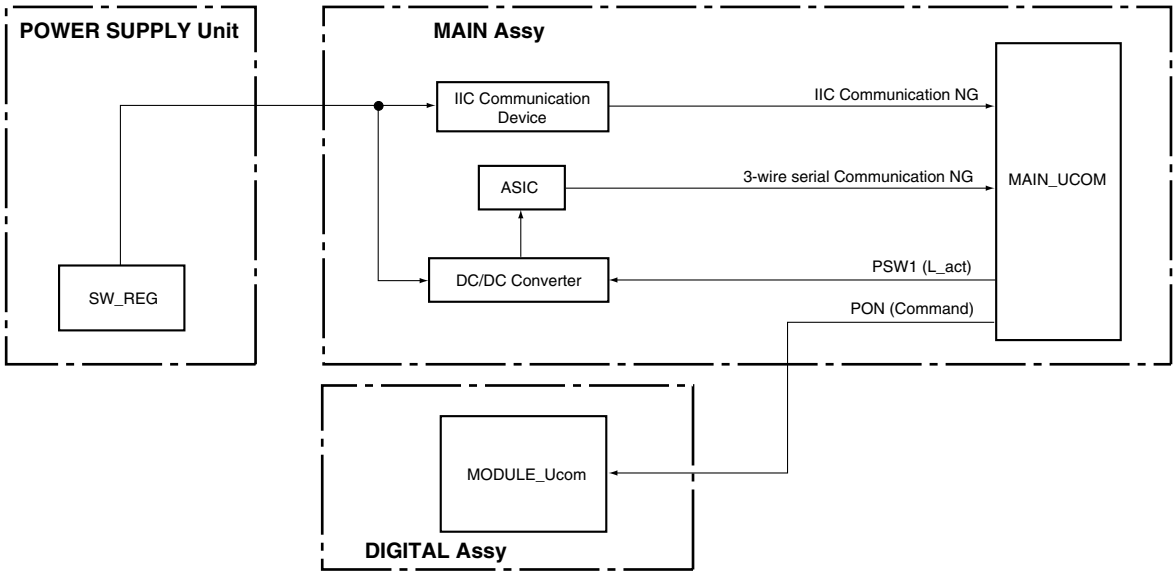
[Outline Circuit]



10.6 PROCESSING IN ABNORMALITY

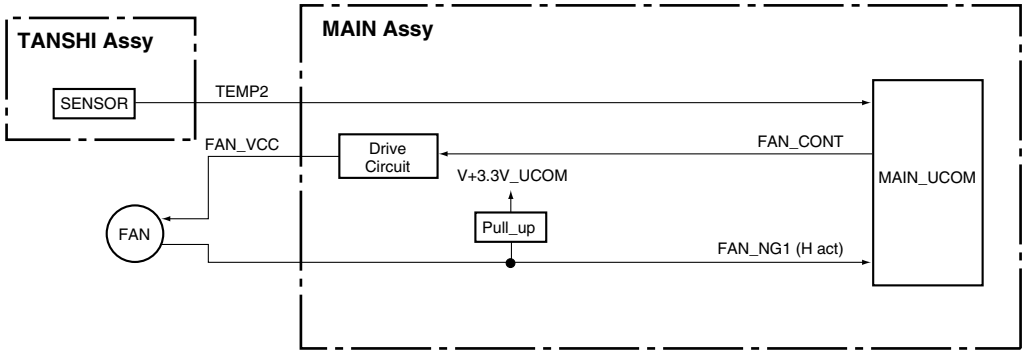
Power supply and DC-DC converter

● **Circuit diagram**



Fan and temperature sensor

● **Circuit diagram**

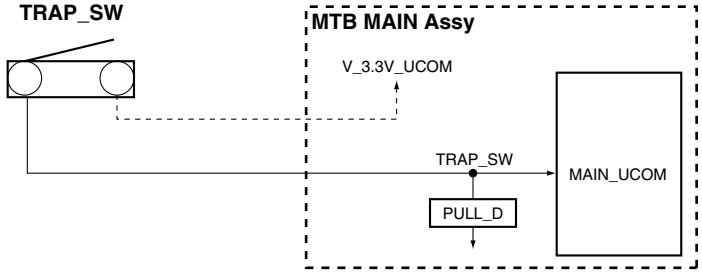


● **Specifications for port monitoring**

Port Name	SD/PD Indication	Assigned Pin	Active
FAN_NG 1	FAN	155	Shutdown with H
TEMP2	Abnormally high temperature in the MR	76	Shutdown when the value exceeds the predetermined value

TRAP_SW

● **Circuit diagram**

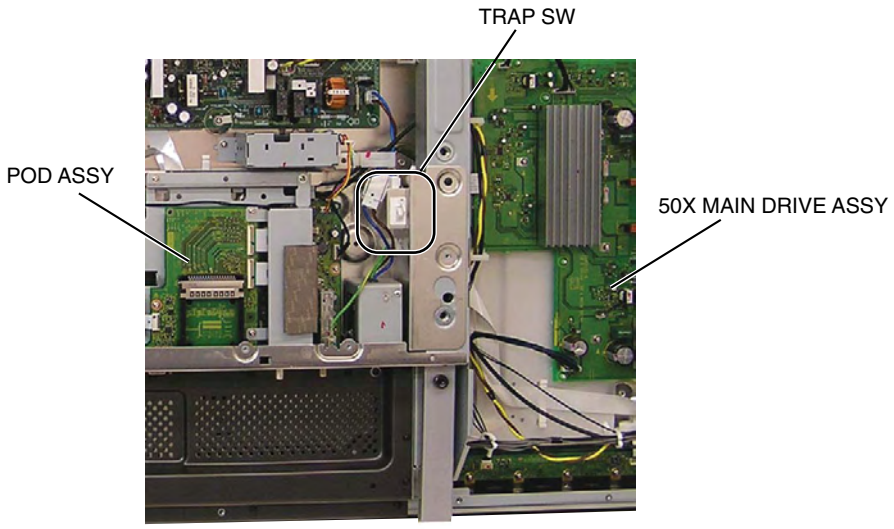


10.7 TRAP SW

● Outline and Notes

For video data transmission inside this Plasma Display, digital signals are used. Therefore, this unit adopts the HDCP (High-bandwidth Digital Content Protection) system for copyright protection. This unit is also provided with a detection switch (TRAP switch) that will prohibit the unit from being turned on again "if the upper plate of the unit is accidentally opened," in order to prevent the panel technology from being leaked out.

The TRAP switch is disabled while the unit is turned off.
When performing internal diagnosis of the PDP, fix the switch to the OFF position using adhesive tape before turning on the unit. After servicing, be sure to remove the adhesive tape.



WHEN THE TRAP SW WORKS

Just in case the TRAP SW works, the red and green LEDs may be lighting. After closing the bonnet or dealing with the TRAP SW on ahead, carry out following procedure from this state.

■ **Cancelling by the remote control**

- Enter to the Factory mode.
- Then, proceed to INITIALIZE layer inside the Factory mode, and then press "DISPLAY" key for more than 5 seconds.

11. SPECIFICATIONS

11.1 MAIN SPECIFICATIONS

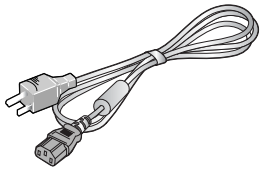
Item			50" Plasma Display Model: PDP-5072HD/ PDP-5071HD/PDP-5070HD
Number of pixels			1365 x 768 pixels
Audio Amplifier			13 W + 13 W (1 kHz, 10 %, 8Ω)
Speakers			Woofer: 4.8 cm x 13 cm cone type Tweeter: 2.5 cm semidome type
Surround System			SRS/FOCUS/TruBass
Power Requirement			120 V AC, 60 Hz, 351 W (26 W Standby)
Weight			Main unit: 34.1 kg (75.2 lbs.) Stand: 4.3 kg (9.5 lbs.) (including bolts) Speaker system: 3.3 kg (7.3 lbs.) (including cables, mounting fittings and screws) Total: 41.7 kg (92 lbs.)
Reception System (Digital)			ATSC Digital TV system
	Circuit type		8VSB/64QAM/256QAM/QPSK demodulation
	Tuner	VHF/UHF	VHF Ch. 2 to 13 UHF Ch. 14 to 69
		CATV	Ch. 2 to 135
	Audio format		Dolby Digital
Reception System (Analog)			American TV standard NTSC system
	Circuit type		Video signal detection PLL full synchronous detection, PLL digital Synthesizer system
	Tuner	VHF/UHF	VHF Ch. 2 to 13 UHF Ch. 14 to 69
		CATV	ANT/CABLE A IN Ch. 1 to 135 ANT B IN Ch. 1 to 125
	Audio multiplex		BTSC system
Terminals Rear		ANT/CABLE A IN	75Ω UNBAL, F Type for DTV/VHF/UHF/CATV in
		ANT B IN	75Ω UNBAL, F Type for VHF/UHF/CATV in Loop out
		INPUT 1	S-VIDEO in, VIDEO in, AUDIO in
		INPUT 2	COMPONENT VIDEO in, S-VIDEO in, VIDEO in, AUDIO in
		INPUT 3	COMPONENT VIDEO in, AUDIO in
		PC	Analog RGB in, AUDIO in
		INPUT 5	HDMI in*, AUDIO in
		INPUT 6	HDMI in*, AUDIO in
		MONITOR OUT	VIDEO out, AUDIO out
		Digital Audio Output	Optical
		G-LINK	1
		CONTROL OUT	1
		SPEAKER	8 Ω to 16 Ω -
		SUB WOOFER OUTPUT	Variable
		Cable CARD	Point of Deployment
	Side	INPUT 4	COMPONENT VIDEO in, VIDEO in, AUDIO in
		USB	USB in**
On-screen display languages			English/French/Spanish

* This conforms to HDMI1.1 and HDCP1.1.
HDMI (High Definition Multimedia Interface) is a digital interface that handles both video and audio using a single cable.
HDCP (High-bandwidth Digital Content Protection) is a technology used to protect copyrighted digital contents that use the Digital Visual Interface (DVI).

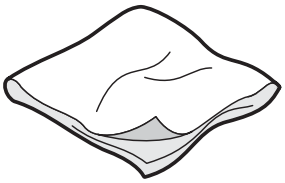
** This conforms to USB 1.1 and 2.0 .

• Design and specifications are subject to change without notice.

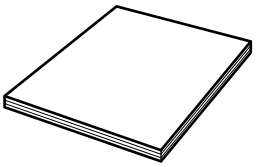
11.2 ACCESSORIES



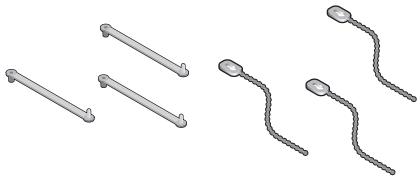
Power cord (2 m/6.6 feet)
(ADG1215)



Cleaning cloth
(AED1285)

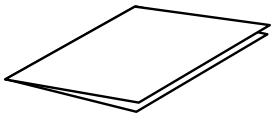


Operating instructions
(ARE1426)

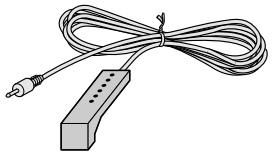


Speed clamp · 3 Bead band · 3

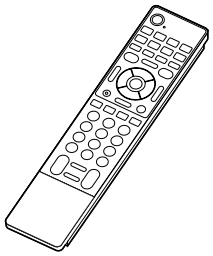
Binder Assy (AEC1908)



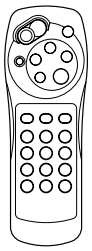
Warranty card



G-LINK cable (3 m/9.8 feet)
(VDX1010)

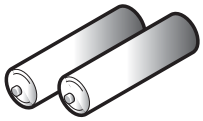


Remote control unit
(AXD1536)

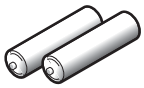


Simplified remote control unit*
(for PDP-5071HD only)
(AXD1539)

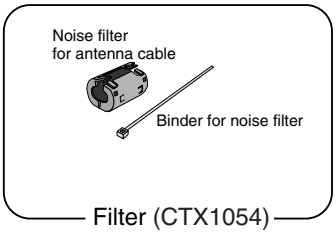
Hexagonal wrench x 1
(Diagonal size: 6 mm)
(AEF1029)



AA size battery x 2
(Alkaline battery for
remote control unit)



AAA size battery x 2
(Manganese battery for simplified
remote control unit)
(for PDP-5071HD only)



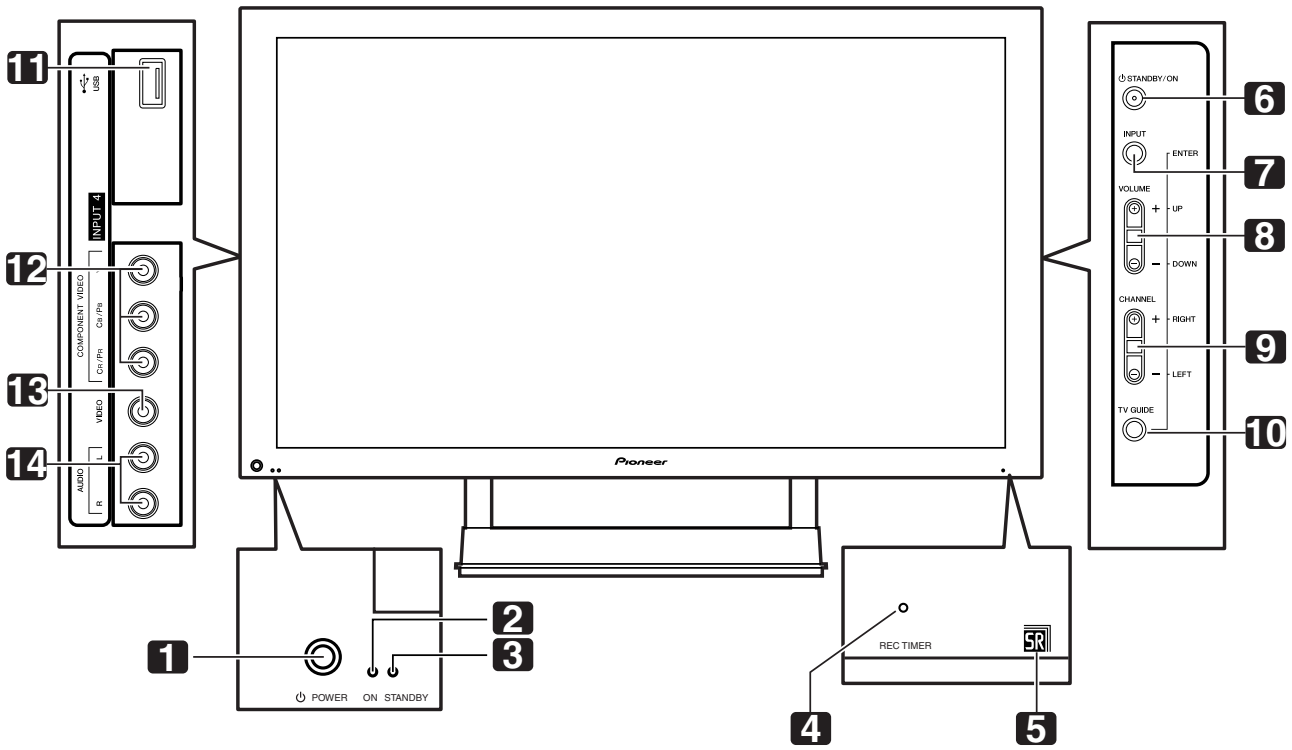
Filter (CTX1054)

* Buttons used for only basic operations are provided on the simplified remote control unit. You can use it as necessary.

11.3 PANEL FACILITIES

Plasma Display

Front/side view
(PDP-5072HD/PDP-5071HD/PDP-5070HD)



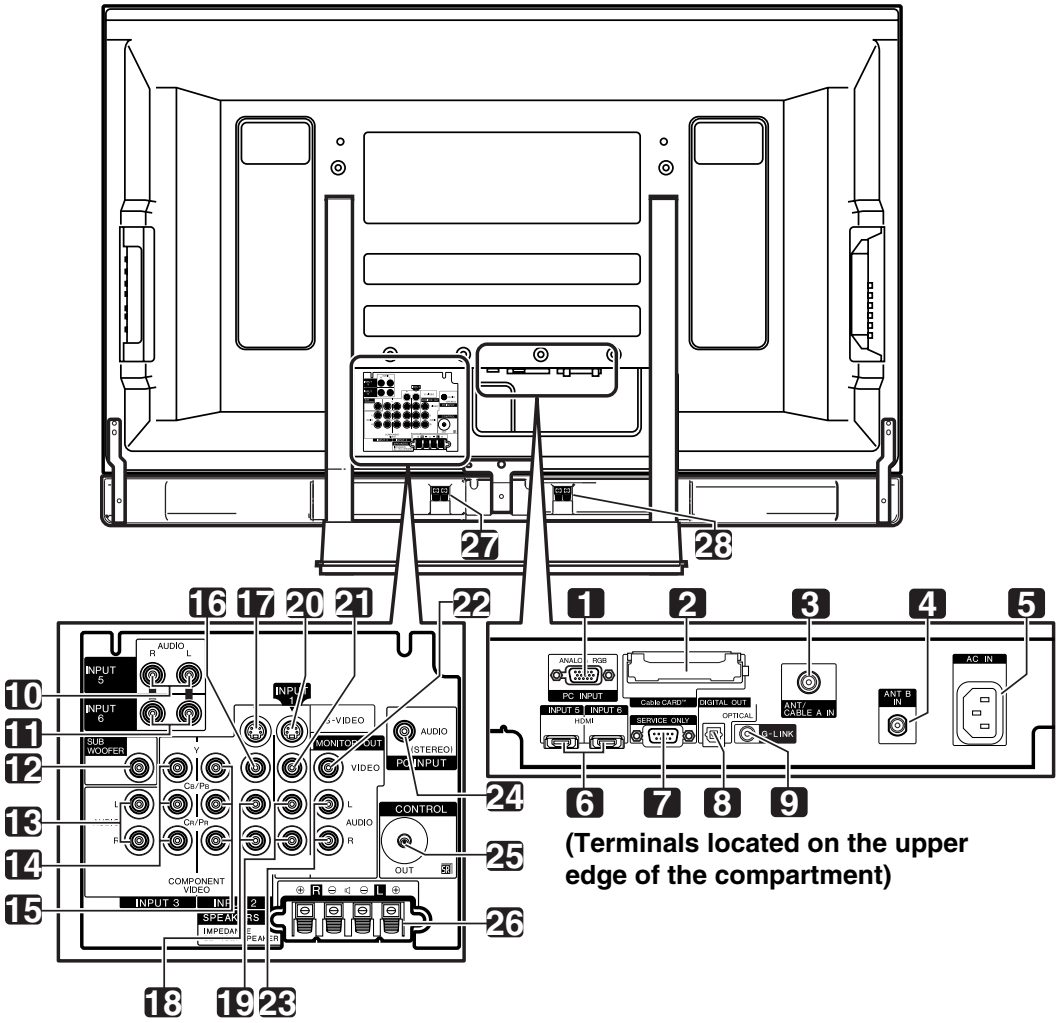
1 ⏻ **POWER** button
2 POWER ON indicator
3 STANDBY indicator
4 REC TIMER indicator
5 Remote control sensor

(Side view)

6 **STANDBY/ON** button
7 **INPUT** button (**ENTER** button*)
8 **VOLUME UP/DOWN** buttons (**UP/DOWN** buttons*)
9 **CHANNEL UP/DOWN** buttons (**LEFT/RIGHT** buttons*)
10 **TV GUIDE** button*
11 USB port
12 INPUT 4 terminals (COMPONENT VIDEO: Y, CB/PB, CR/PR)
13 INPUT 4 terminal (VIDEO)
14 INPUT 4 terminals (AUDIO)

The buttons with asterisks (*) can operate the TV Guide On Screen™ system.

Rear view
(PDP-5072HD/PDP-5071HD/PDP-5070HD)

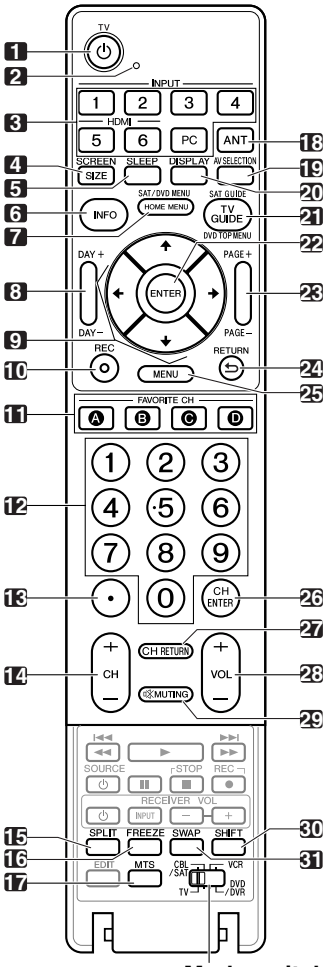


(Terminals located on the upper edge of the compartment)

1 PC INPUT terminal (ANALOG RGB)
2 CableCARD™ slot
3 ANT/CABLE A IN terminal
4 ANT B IN terminal
5 AC IN terminal
6 HDMI terminals (INPUT 5/INPUT 6)
7 RS-232C terminal
(used for factory setup)
8 DIGITAL OUT terminal (OPTICAL)
9 G-LINK terminal
10 INPUT 5 terminals (AUDIO)
11 INPUT 6 terminals (AUDIO)
12 SUB WOOFER terminal
13 INPUT 3 terminals (AUDIO)
14 INPUT 3 terminals (COMPONENT VIDEO: Y, CB/PB, CR/PR)
15 INPUT 2 terminals (COMPONENT VIDEO: Y, C_B/P_B, C_R/P_R)
16 INPUT 2 terminal (VIDEO)
17 INPUT 2 terminal (S-VIDEO)
18 INPUT 2 terminals (AUDIO)
19 INPUT 1 terminals (AUDIO)
20 INPUT 1 terminal (S-VIDEO)
21 INPUT 1 terminal (VIDEO)
22 MONITOR OUT terminal (VIDEO)
23 MONITOR OUT terminals (AUDIO)
24 PC INPUT terminal (AUDIO)
25 CONTROL OUT terminal
26 SPEAKER (R/L) terminals
27 SPEAKER (R) terminal (Speaker side)
28 SPEAKER (L) terminal (Speaker side)

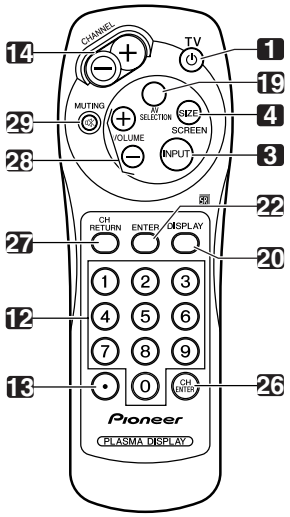
Remote control unit

This section describes the functions of the buttons available when the mode switch has been set to TV. For the buttons for controlling other equipment, see "Using the remote control unit to control other devices" starting .



Mode switch (with "TV" selected)

Simplified remote control unit (PDP-5071HD/PDP-4271HD only)



1 **TV ⏻** : Turns on the power to the Plasma Display System or places it into standby mode.
2 Transmission confirmation LED
3 **INPUT**: Selects an input source of the Plasma Display System. (INPUT 1, INPUT 2, INPUT 3, INPUT 4, INPUT 5, INPUT 6 and PC) (With the simplified remote control unit, **INPUT** toggles between ANT-A, ANT-B, INPUT 1, INPUT 2, INPUT 3, INPUT 4, INPUT 5, INPUT 6 and PC.)
4 **SCREEN SIZE**: Selects the screen size.
5 **SLEEP**: Sets the sleep timer.
6 **INFO**: Displays a channel banner when a TV program is being watched.
When the TV Guide On Screen™ system is in operation, displays information about the currently highlighted channel (if available).
7 **HOME MENU**: Displays the Home Menu screen.
8 **DAY +/-**: Jumps to the next or previous day of program listings in the TV Guide On Screen™ Listing service.
9 **▲/▼/◀/▶**: Selects a desired item on the menu screen.
10 **REC**: When using the TV Guide On Screen™ System, starts recording with a connected VCR.
11 **FAVORITE CH (A, B, C, D):**
Selects any of the four preset channels. for details to set the FAVORITE CH.
While watching, you can toggle the set channels by pressing **A**, **B**, **C** and **D**.
12 **0 - 9**: Selects the channel.
13 **•(dot)**: Enters a dot.
14 **CH +/-**: Selects the channel.
15 **SPLIT**: Switches the screen mode among 2-screen, picture-in-picture, and single-screen.
16 **FREEZE**: Freezes a frame from a moving image. Press again to cancel the function.
17 **MTS**: Selects MTS/SAP or language depending on the program being watched.
18 **ANT**: Selects the antenna (A, B). for details.
19 **AV SELECTION**: Selects audio and video settings. (AV mode: STANDARD, DYNAMIC, MOVIE, GAME, USER. PC mode: STANDARD, USER.)
20 **DISPLAY**: Displays the channel information.
21 **TV GUIDE**: Displays the TV Guide On Screen™ system.
22 **ENTER**: Executes a command.
23 **PAGE +/-** (for the TV Guide On Screen™ system): Scrolls the program listing screen vertically.
24 **RETURN**: Returns to the previous menu screen.
25 **MENU**: Displays a panel menu in the TV Guide On Screen™ system.
26 **CH ENTER**: Executes a channel number.
27 **CH RETURN**:Returns to the previous channel. This button is disabled while the TV Guide On Screen™ system is displayed.
28 **VOL +/-**: Sets the volume.
29 **MUTING**: Mutes the sound.
30 **SHIFT**: Moves the location of the small screen when in the picture-in-picture mode.
31 **SWAP**: Switches between the two screens when in the 2-screen or picture-in-picture mode.

Luminous remote control buttons (main unit only)
All buttons on the main remote control unit are luminous and gather and store light. This enables quick access to the desired function when performing operations in dark places.

NOTE

- When using the remote control unit, point it at the Plasma Display.
- for operating buttons not listed on this page.

12. IC INFORMATION

• The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

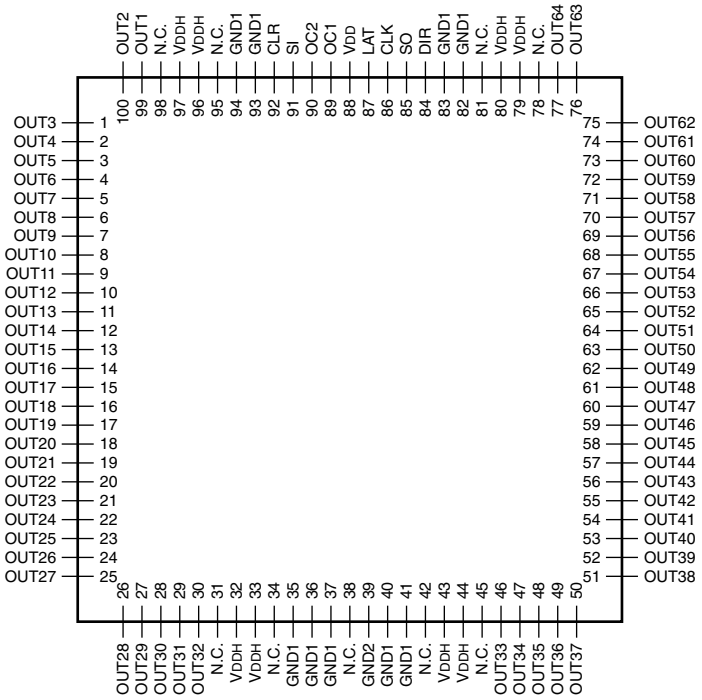
● **List of IC**

SN755870KPZT, BCM7038KPB1G-B2, R5520H001B, R2S11002AFT, R2S11001FT, UPD64015AGM-UEM, AD9985KSTZ-110, SII9023CTU

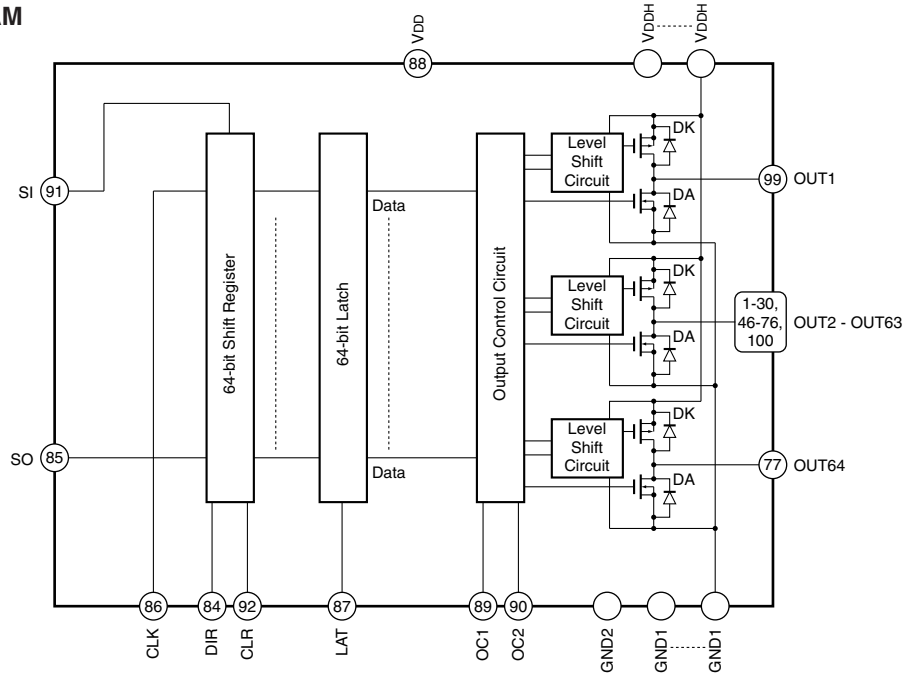
■ SN755870KPZT (50 SCAN A ASSY : IC2801 - IC2806) (50 SCAN B ASSY : IC2901 - IC2906)

• PLASMA DISPLAY PANEL IC

● **PIN LAYOUT (Top View)**



● **BLOCK DIAGRAM**



● **PIN FUNNCTION**

No.	Pin Name	I/O	Pin Function
1 - 30	OUT3 - OUT32	O	High-voltage push-pull output
31	N.C.	–	Not used
32 - 33	V_{DDH}	–	Power for High-voltage circuit
34	N.C.	–	Not used
35 - 37	GND1	–	GND
38	N.C.	–	Not used
39	GND2	–	GND
40 - 41	GND1	–	GND
42	N.C.	–	Not used
43 - 44	V_{DDH}	–	Power for High-voltage circuit
45	N.C.	–	Not used
46 - 77	OUT33 - OUT64	O	High-voltage push-pull output
78	N.C.	–	Not used
79 - 80	V_{DDH}	–	Power for High-voltage circuit
81	N.C.	–	Not used
82 - 83	GND1	–	GND
84	DIR	I	Setting the shift direction of shift-register L : reverse side shift (SO→SI), H : forward side shift (SI→SO)
85	SO	I/O	Serial data In/Out
86	CLK	I	Serial clock Input Down-side edge trigger
87	LAT	I	LAT data Input L : The data of shiftregister is transferred to ouput latch. H : The ouput data of latch is holded.
88	V_{DD}	–	Power for Logic circuit
89	OC1	I	Output control Output is controlled by truth table right side.
90	OC2	I	
91	SI	I/O	Serial data In/Out
92	CLR	I	All output reset CLR terminal : L → normal operation, CLR terminal : H→ All output "H"
93 - 94	GND1	–	GND
95	N.C.	–	Not used
96 - 97	V_{DDH}	–	Power for High-voltage circuit
98	N.C.	–	Not used
99 - 100	OUT1 - OUT2	O	High-voltage push-pull output

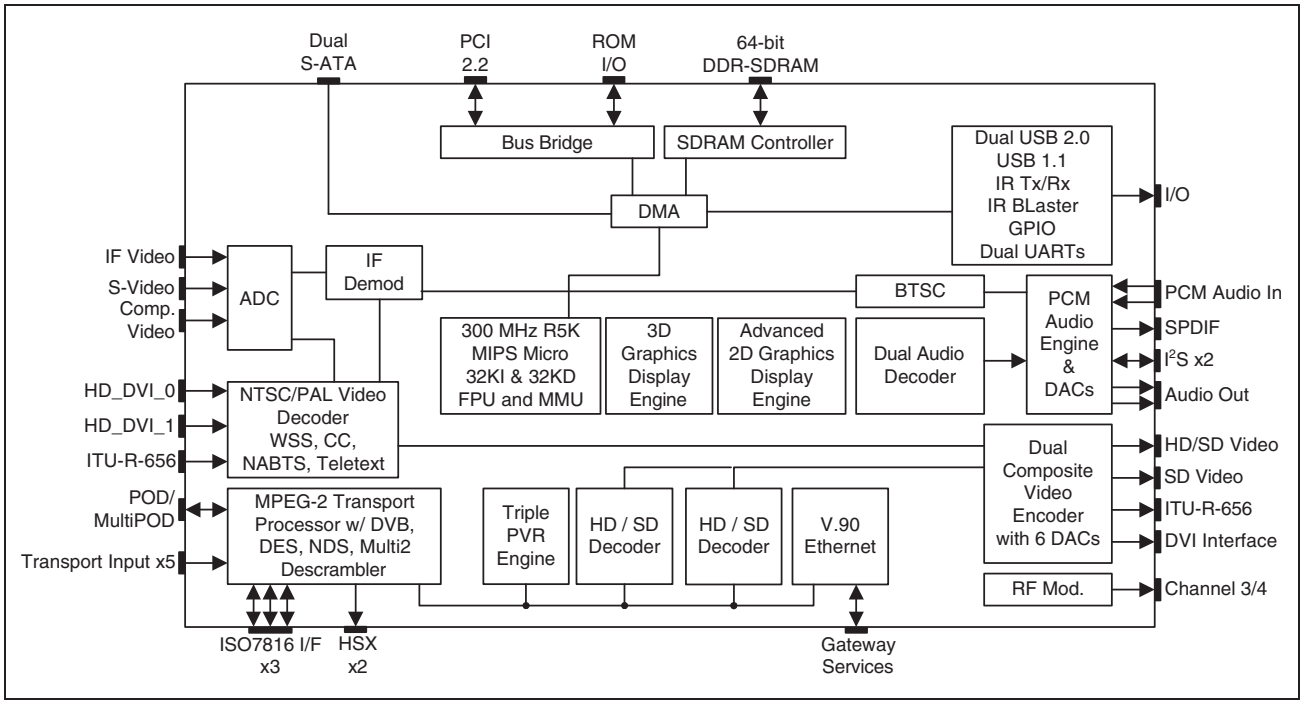
OC1	OC2	OUT
L	L	ALL Hi-Z
L	H	DATA
H	L	ALL L
H	H	ALL H

■ BCM7038KPB1G-B2 (MAIN ASSY : IC6201)

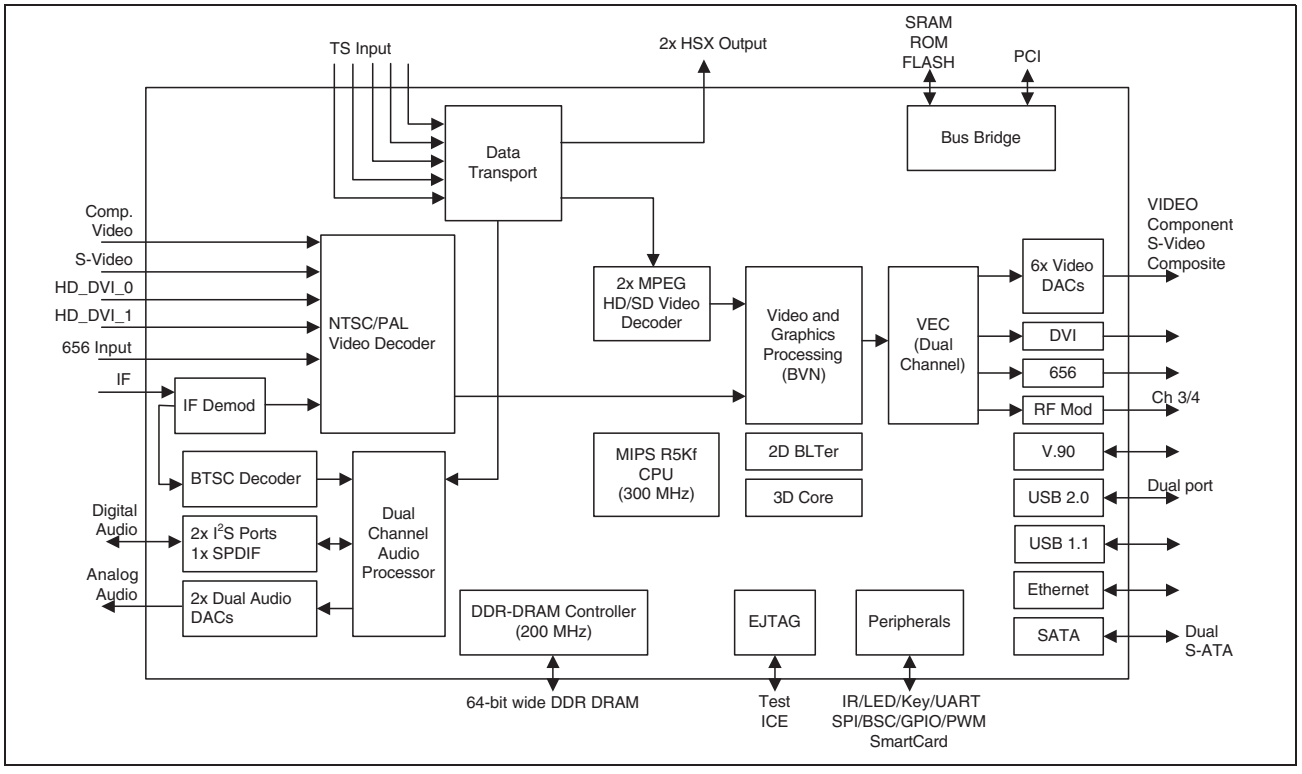
• System IC

● BLOCK DIAGRAM

[System Block Diagram]



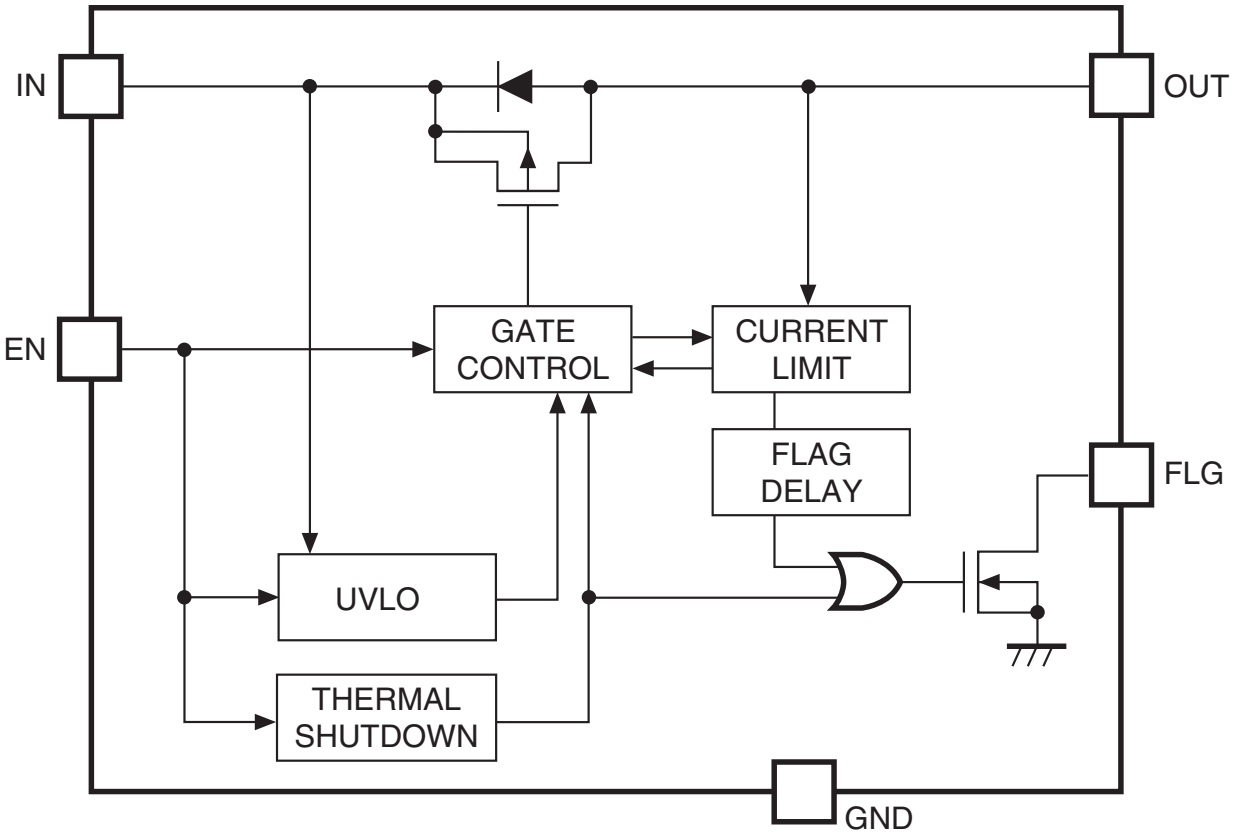
[Functional Block Diagram]



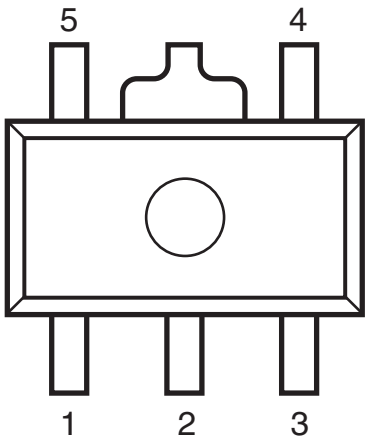
■ R5520H001B (MAIN ASSY : IC7105)

• USB HIGH-SIDE SW IC

● BLOCK DIAGRAM



● PIN LAYOUT



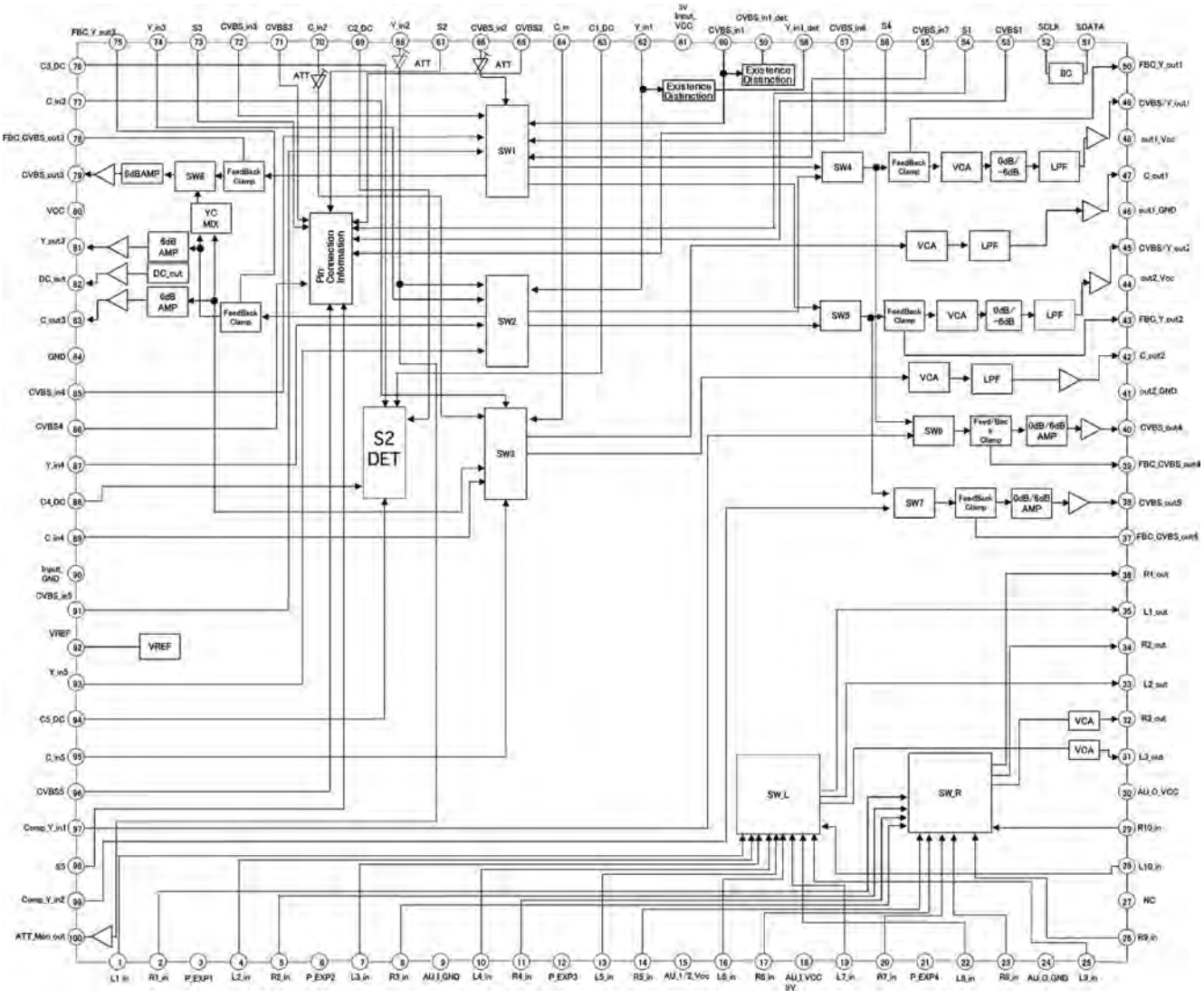
● PIN FUNCTION

Pin No.	Name	Function
1	EN	Enable terminal
2	GND	GND terminal
3	FLG	FLAG terminal (Open-drain output)
4	IN	Power input terminal
5	OUT	Output terminal

■ R2S11002AFT (MAIN ASSY: IC4701)

• AV SW

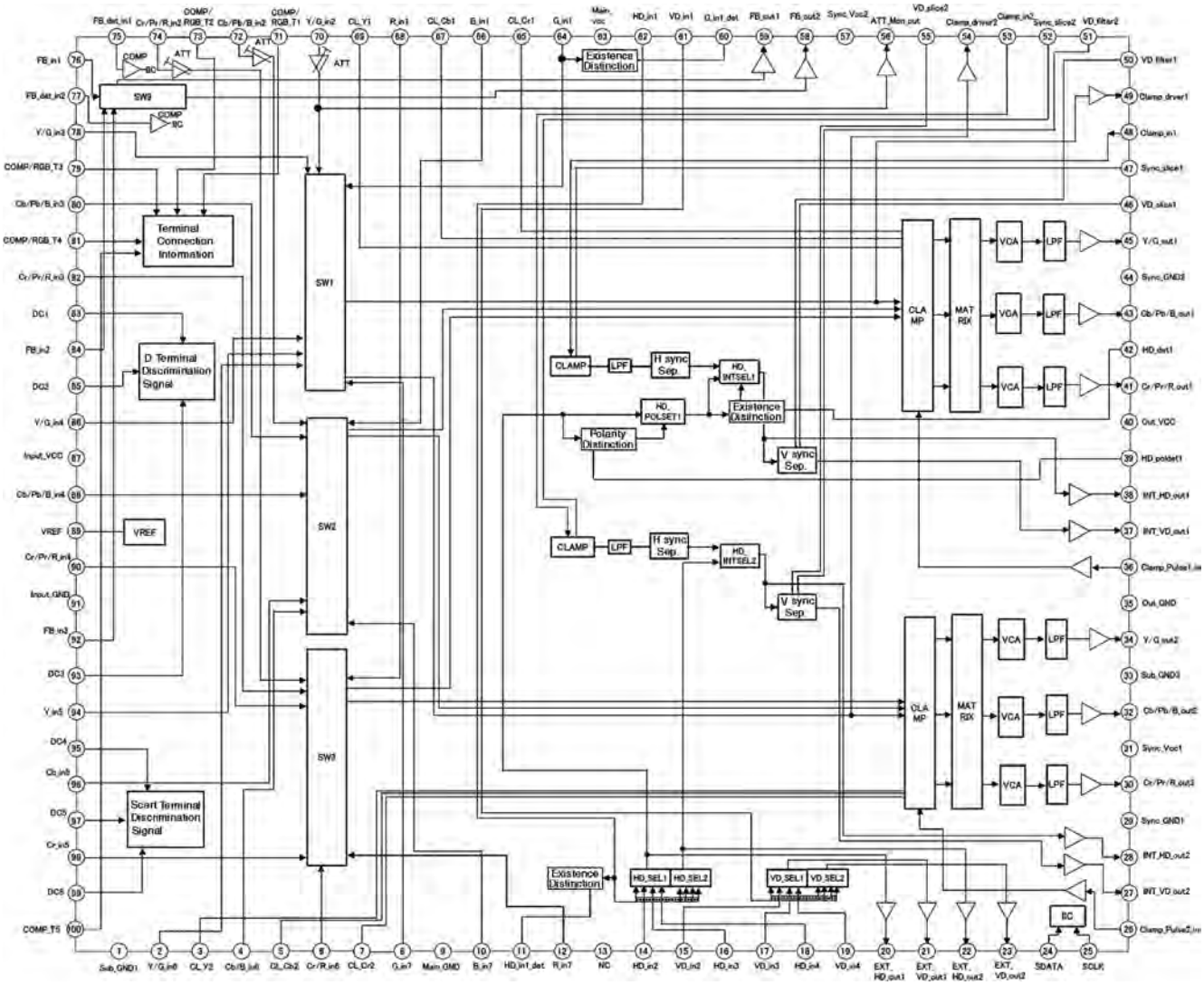
● Block Diagram



■ R2S11001FT (MAIN ASSY: IC4901)

• Component SW IC

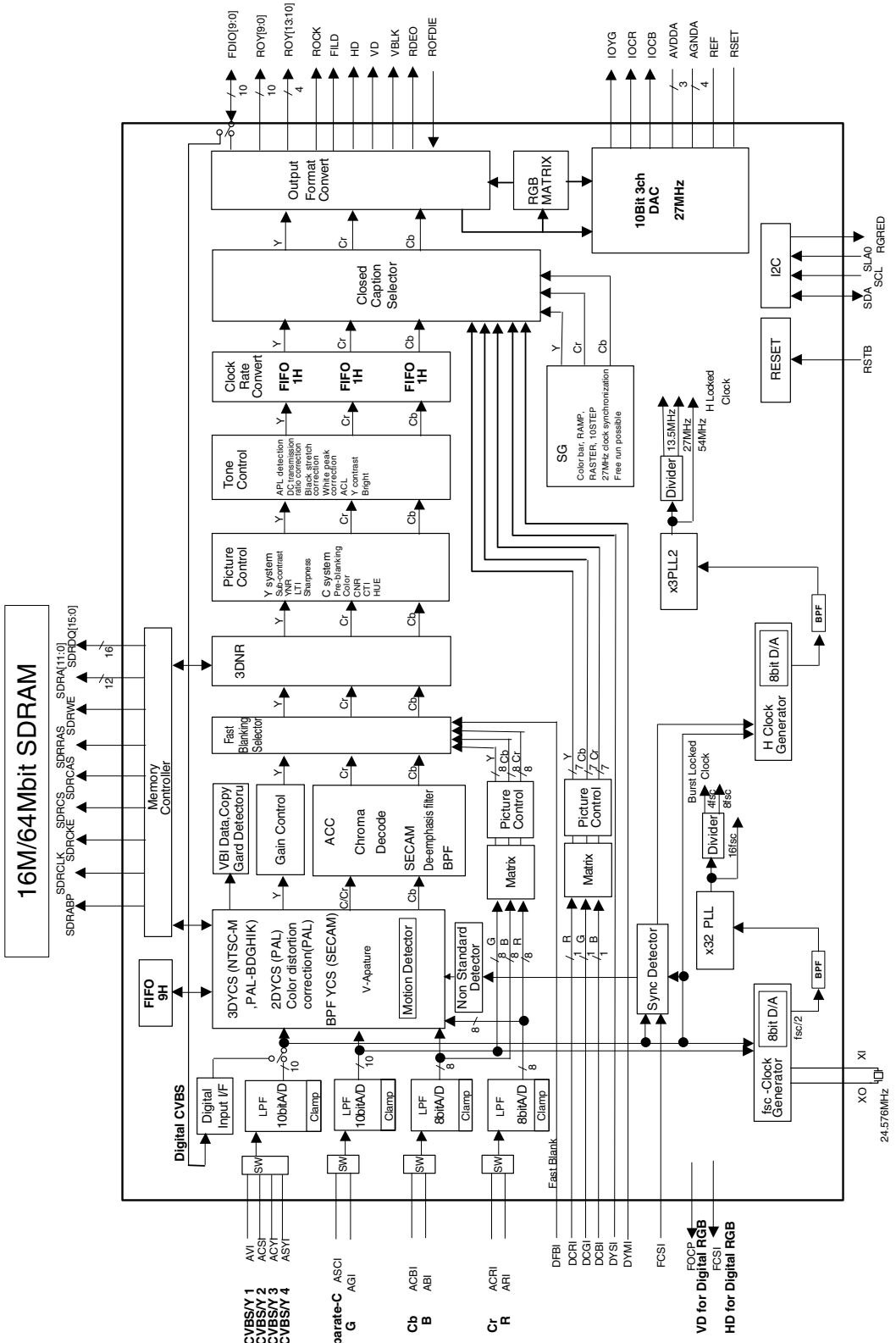
● Block Diagram



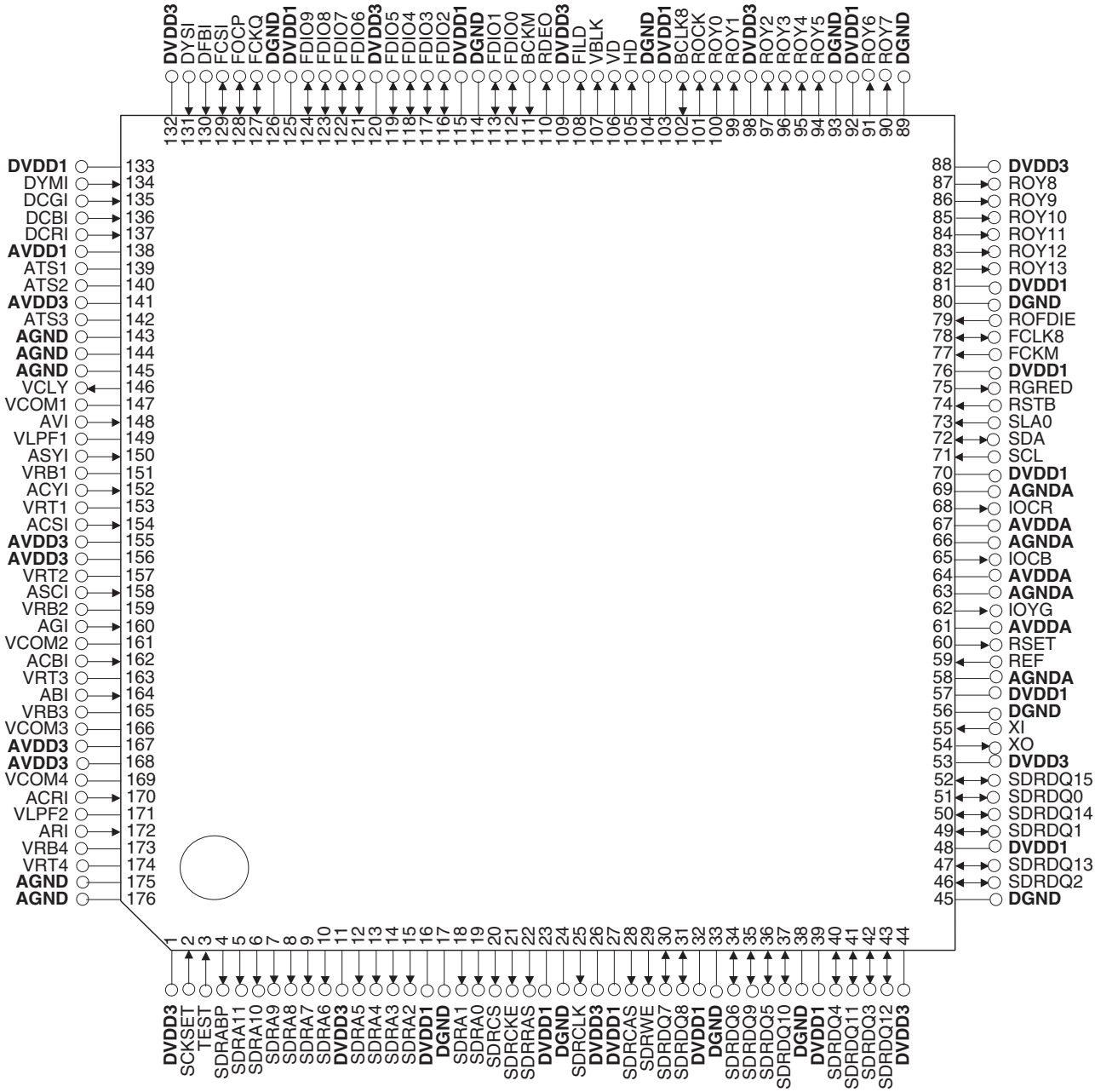
■ UPD64015AGM-UEM (MAIN ASSY : IC5101)

• Video decoder (for main screen)

● Block Diagram



● **Pin Arrangement (Top View)**



● **Pin Function**

2.1 Power supply/ground terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
AVDD1	138	–	–	–	Analog 1.5V power supply Connect to the 1.5V power supply. Separate it from the other terminals via a filter.
AVDD3	141	–	–	–	Analog 3.3V power supply Connect to the 3.3V power supply. Separate it from the other terminals via a filter.
	155,156,167,168	–	–	–	Analog 3.3V power supply for ADC. Connect to the 3.3V power supply. Separate it from the other power lines via a filter.
AVDDA	61,64,67	–	–	–	Analog 3.3V power supply for DAC. Connect to the 3.3V power supply. Separate it from the other power lines via a filter.
AGND	143,144,145,175,176	–	–	–	Analog ground
AGNDA	58,63,66,69	–	–	–	Analog ground (for DAC)
DVDD1	16,23,27,32,39,48, 57,70,76,81,92,103, 115,125,133	–	–	–	Digital 1.5V power supply Connect to the 1.5V power supply.
DVDD3	1,11,26,44,53,88,98, 109,120,132	–	–	–	Digital 3.3V power supply Connect to the 3.3V power supply.
DGND	17,24,33,38,45,56, 80,89,93,104,114, 126	–	–	–	Digital ground

2.2 System reset terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
RSTB	74	I	Schmitt	–	System reset input (Active-Low)

● **Pin Function**

2.3 I2C bus interface terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
RGRED	75	O	LVTTL N-ch open drain	6 mA	I^2C register lead flag output (Active-Low)
SCL	71	I	LVTTL	Fail-safe	I^2C bus clock input Connect to the SCL line of the system.
SDA	72	I/O	LVTTL N-ch open drain	Fail-safe 6 mA	I^2C bus data input/output Connect to the SDA line of the system.
SLA0	73	I	LVTTL	–	I^2C bus slave address selection input (L : B8h/B9h, H : BAh/BBh) Connect to GND when set to low level and to DVDD3 (3.3V) when set to high level.

2.4 Terminal for test

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
SCKSET	2	I	LVTTL	–	Test mode selection (L: normal, H: test mode)
TEST	3	I	LVTTL	–	Test setting (L: normal, H: test mode)
FCKM	77	I	LVTTL	–	FCLK8 test mode selection (L: normal, H: test mode)
BCKM	111	I	LVTTL	–	Test mode selection of BCLK8 terminal. (L: normal, H: test mode)
ATS1	139	I	Analog	–	Analog test input Connect to GND normally.
ATS2	140	I	Analog	–	Analog test input Connect to GND normally.
ATS3	142	I	Analog	–	Analog test input Connect to GND normally.
VLPF1	149	O	Analog	–	Analog test output Connect to GND via a 0.1μF capacitor.
VLPF2	171	O	Analog	–	Analog test output Connect to GND via a 0.1μF capacitor.

Caution: Connect these terminals for test to GND unless otherwise instructed.

● **Pin Function**

2.5 Clock generator terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
XI	55	I	Analog	–	Reference clock input Connect 24.576MHz crystal oscillator.
XO	54	O	Analog	–	Reference clock output Connect 24.576MHz crystal oscillator.
BCLK8	102	I/O	LVTTL 3-state	6 mA	Subsequent stage line lock clock monitor input/output It will become Hi-Z when BCK8OUT (SA1Fh, D5)=0. Normally, set to BCK8OUT=0 and leave it open.

2.6 Terminal for μPD64031A and μPD64032 digital connection

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
FCLK8	78	I/O	LVTTL 3-state	6 mA	Front stage burst lock clock input/output It will become Hi-Z when FCK8S[2:0] (SA21h, D6-D4)=000b. Normally, set to FCK8S[2:0]=0 and leave it open.
FCKQ	127	I/O	LVTTL 3-state	3 mA	Sampling clock output for μPD64031A and μPD64032 digital connection. It will become Hi-Z when FCKQS[2:0] (SA21h, D2-D0)=000b. Normally, set to FCKQS[2:0]=0 and leave it open.
FOCP	128	I/O	LVTTL 3-state	3 mA	Clamp pulse output for μPD64031A and μPD64032 digital connection/timing output (VD) for digital RGB input. It will become Hi-Z when FOCPS[2:0] (SA23h, D2-D0)=000b. Normally, set to FOCPS[2:0]=0 and leave it open.

2.7 Terminal for RGB input

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
DFBI	130	I	LVTTL	–	Fast Blanking signal input for analog RGB input.
DYSI	131	I	LVTTL	–	YS signal input for digital RGB input.
DYMI	134	I	LVTTL	–	YM signal input for digital RGB input.
DCGI	135	I	LVTTL	–	Digital RGB/G signal input
DCBI	136	I	LVTTL	–	Digital RGB/B signal input
DCRI	137	I	LVTTL	–	Digital RGB/R signal input
FCSI	129	I/O	LVTTL 3-state	3 mA	Sync separation signal input/timing output (HD) for RGB input. It will become Hi-Z when FCSIS[2:0] (SA22h, D2-D0)=000b. Normally, set to FCSIS[2:0]=0 and leave it open.

● **Pin Function**

2.8 ADC1 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
AVI	148	I	Analog	–	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
ASYI	150	I	Analog	–	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
ACYI	152	I	Analog	–	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
ACSI	154	I	Analog	–	ADC1 composite/Y signal input Input the image signal by cutting the capacity.
VCLY	146	O	Analog	–	ADC1 clamp electric potential Connect to GND via 0.1μF and 10μF capacitors.
VCOM1	147	I	Analog	–	ADC1 in-phase reference voltage Connect to GND via a 0.1μF capacitor.
VRB1	151	I	Analog	–	ADC1 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VRT1	153	I	Analog	–	ADC1 top reference voltage Connect to GND via a 0.1μF capacitor.

2.9 ADC2 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
ASCI	158	I	Analog	–	ADC2 separate C signal input Input the image signal by cutting the capacity.
AGI	160	I	Analog	–	ADC2 RGB component G signal input Input the image signal by cutting the capacity.
VRT2	157	I	Analog	–	ADC2 top reference voltage Connect to GND via a 0.1μF capacitor.
VRB2	159	I	Analog	–	ADC2 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VCOM2	161	I	Analog	–	ADC2 in-phase reference voltage Connect to GND via a 0.1μF capacitor.

● **Pin Function**

2.10 ACD3 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
ACBI	162	I	Analog	–	ADC3 color difference component Cb signal input Input the image signal by cutting the capacity.
ABI	164	I	Analog	–	ADC3 RGB component B signal input Input the image signal by cutting the capacity.
VRT3	163	I	Analog	–	ADC3 top reference voltage Connect to GND via a 0.1μF capacitor.
VRB3	165	I	Analog	–	ADC3 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VCOM3	166	I	Analog	–	ADC3 in-phase reference voltage Connect to GND via a 0.1μF capacitor.

2.9 ACD4 section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
ACRI	170	I	Analog	–	ADC4 color difference component Cr signal input Input the image signal by cutting the capacity.
ARI	172	I	Analog	–	ADC3 RGB component R signal input Input the image signal by cutting the capacity.
VCOM4	169	I	Analog	–	ADC4 in-phase reference voltage Connect to GND via a 0.1μF capacitor.
VRB4	173	I	Analog	–	ADC4 bottom reference voltage Connect to GND via a 0.1μF capacitor.
VRT4	174	I	Analog	–	ADC4 top reference voltage Connect to GND via a 0.1μF capacitor.

2.12 DAC section terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
IO-YG	62	O	Analog	–	Color difference component Y/RGB component G output signal. Connect to AGNDA via a 200Ω load resistance.
IO-CR	68	O	Analog	–	Color difference component Cr/RGB component R output signal. Connect to AGNDA via a 200Ω load resistance.
IO-CB	65	O	Analog	–	Color difference component Cb/RGB component B output signal. Connect to AGNDA via a 200Ω load resistance.
REF	59	I	Analog	–	External reference input pin. Supply 1.0V. And, connect to AGNDA via a 0.1μF capacitor.
RSET	60	O	Analog	–	Connect to AGNDA via a 620Ω resistor for external adjustment.

● **Pin Function**

2.13 Digital image input/output terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
FDIO0-FDIO9	112,113,116, 117,118,119, 121,122,123, 124	I/O	LVTTL 3-state	6 mA	Digital 8/10 bit Cb, Cr output/input at the time of μPD64031A digital connection. It will become Hi-Z when FDIOS[2:0] (SA22h, D6-D4)=000b. Leave it open when not in use.
ROCK	101	O	LVTTL 3-state	6 mA	Clock for digital ITU-R BT.656/component output.
ROY0-ROY13	100,99,97,96, 95,94,91,90, 87,86,85,84, 83,82	O	LVTTL 3-state	6 mA	Digital ITU-R BT.656/component output. Digital RGB component (8 bit) output
ROFDIE	79	I	LVTTL	–	Image input/output terminal output enable. The state of ROY[13:0], ROCK, HD, VD, VBLK, FILD and RDEO terminals is controlled. L: Output terminal Hi-Z, H: Output enable Normally, pull up to 3.3V.

2.14 timing output terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
HD	105	O	LVTTL 3-state	3 mA	Horizontal sync signal output
VD	106	O	LVTTL 3-state	3 mA	Vertical sync signal output
VBLK	107	O	LVTTL 3-state	3 mA	V blanking output
FILD	108	O	LVTTL 3-state	3 mA	Field output
RDEO	110	O	LVTTL 3-state	3 mA	Effective pixel range output

● **Pin Function**

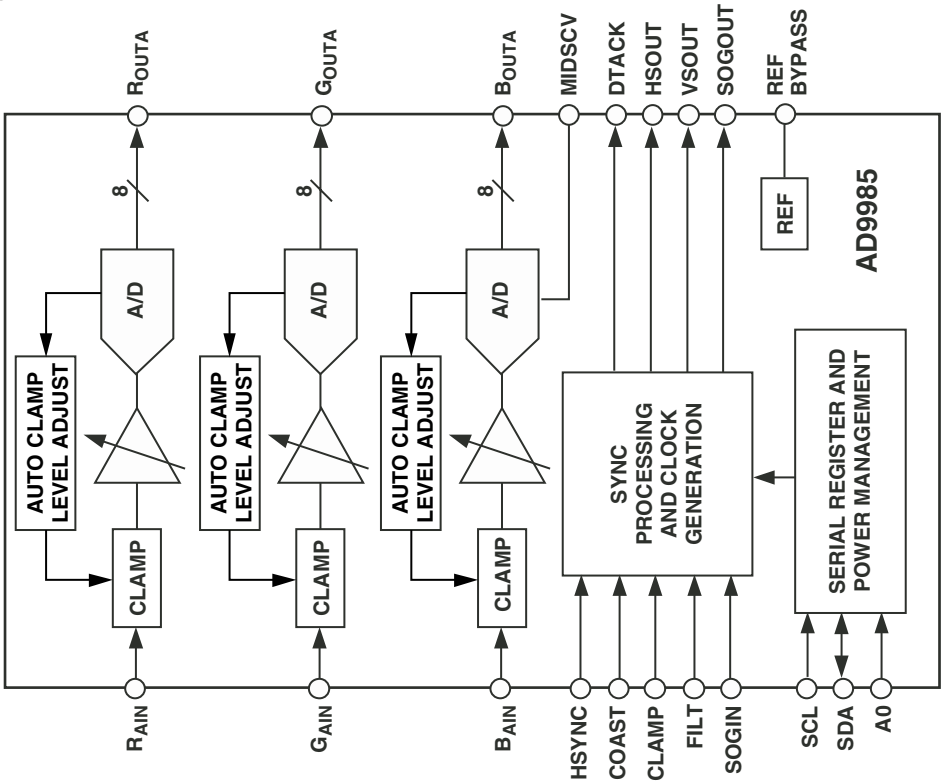
2.15 Memory interface terminal

Acronyms	Terminal number	I/O	Level	Buffer type PU/PD [kΩ]	Functions
SDRABP	4	O	LVTTL 3-state	3 mA	All bank pre-charge output for external memory (Active-High)
SDRCLK	25	O	LVTTL 3-state	9 mA	Clock output for external memory
SDRCKE	21	O	LVTTL 3-state	3 mA	Clock enable output for external memory (Active-High)
SDRCS	20	O	LVTTL 3-state	3 mA	Chip select output for external memory (Active-Low)
SDRCAS	28	O	LVTTL 3-state	3 mA	Column address strobe output for external memory (Active-Low)
SDRRAS	22	O	LVTTL 3-state	3 mA	Low address strobe output for external memory (Active-Low)
SDRWE	29	O	LVTTL 3-state	3 mA	Write enable output for external memory (Active-Low)
SDRA0 -SDRA11	19,18,15,14, 13,12,10,9,8, 7,6,5	O	LVTTL 3-state	3 mA	Address output for external memory Insert a damping resistor of approximately 100Ω, and connect to the SDRAM address terminal.
SDRDQ0 -SDRDQ15	51,49,46,42, 40,36,34,30, 31,35,37,41, 43,47,50,52	I/O	LVTTL 3-state	6 mA	Data input/output for external memory.

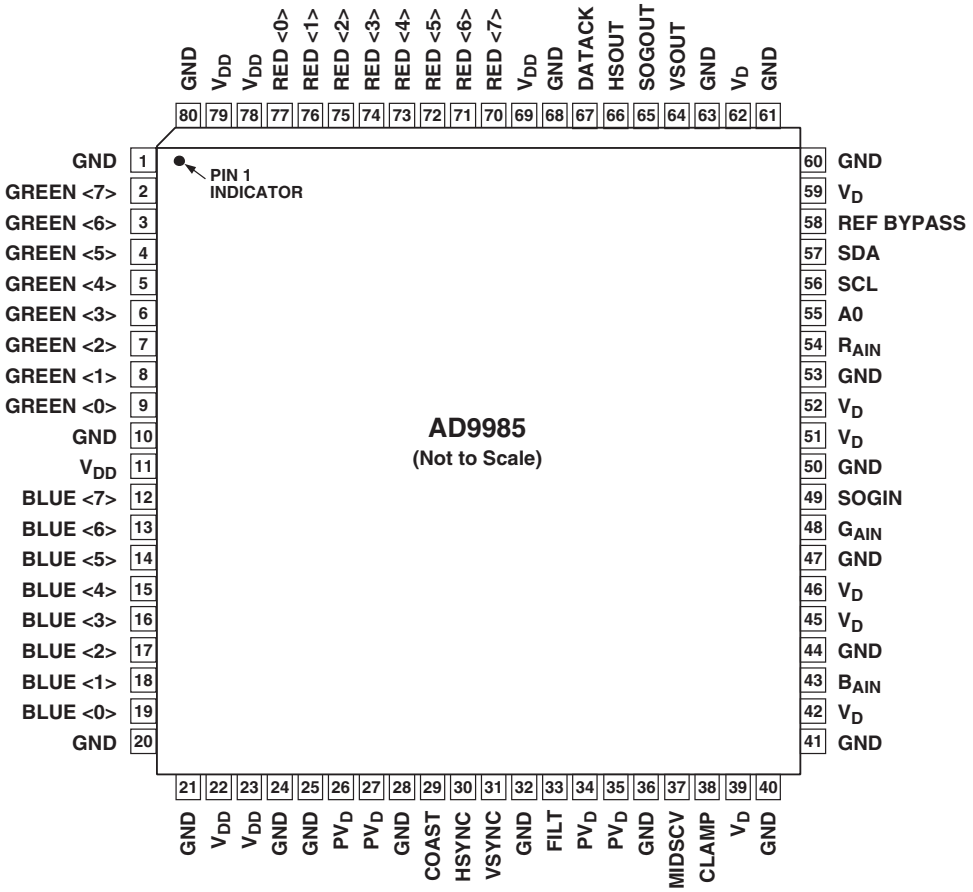
■ AD9985KSTZ-110-K (MAIN ASSY : IC5301)

• ADC

● Block Diagram



● Pin Arrangement (Top View)



● Pin Function

Pin Type	Mnemonic	Function	Value	Pin No.
Inputs	R_{AIN}	Analog Input for Converter R	0.0 V to 1.0V	54
	G_{AIN}	Analog Input for Converter G	0.0 V to 1.0V	48
	B_{AIN}	Analog Input for Converter B	0.0 V to 1.0V	43
	HSYNC	Horizontal SYNC Input	3.3 V CMOS	30
	VSYNC	Vertical SYNC Input	3.3 V CMOS	31
	SOGIN	Input for Sync-on-Green	0.0 V to 1.0 V	49
	CLAMP	Clamp Input (External CLAMP Signal)	3.3 V CMOS	38
	COAST	PLL COAST Signal Input	3.3 V CMOS	29
Outputs	Red [7:0]	Outputs of Converter Red, Bit 7 is the MSB	3.3 V CMOS	70–77
	Green [7:0]	Outputs of Converter Green, Bit 7 is the BSB	3.3 V CMOS	2–9
	Blue [7:0]	Outputs of Converter Blue, Bit 7 is the BSB	3.3 V CMOS	12–19
	DATACK	Data Output Clock	3.3 V CMOS	67
	HSOUT	HSYNC Output (Phase-Aligned with DATACK)	3.3 V CMOS	66
	VSOUT	VSYNC Output (Phase-Aligned with DATACK)	3.3 V CMOS	64
	SOGOUT	Sync-on-Green Slicer Output	3.3 V CMOS	65
References	REF BYPASS	Internal Reference Bypass	1.25 V	58
	MIDSCV	Internal Midscale Voltage Bypass		37
	FILT	Connection for External Filter Components for Internal PLL		33
Power Supply	V_D	Analog Power Supply	3.3 V	39, 42, 45, 46, 51, 52, 59, 62
	V_{DD}	Output Power Supply	3.3 V	11, 22, 23, 69, 78, 79
	PV_D	PLL Power Supply	3.3 V	26, 27, 34, 35
	GND	Ground	0 V	1, 10, 20, 21, 24, 25, 28, 32, 36, 40, 41, 44, 47, 50, 53, 60, 61, 63, 68, 80
Control	SDA	Serial Port Data I/O	3.3 V CMOS	57
	SCL	Serial Port Data Clock (100 kHz Maximum)	3.3 V CMOS	56
	A0	Serial Port Address Input 1	3.3 V CMOS	55

● Pin Function

Pin Name	Function
OUTPUTS	
HSOUT	Horizontal Sync Output A reconstructed and phase-aligned version of the Hsync input. Both the polarity and duration of this output can be programmed via serial bus registers. By maintaining alignment with DATACK and Data, data timing with respect to horizontal sync can always be determined.
VSOUT	Vertical Sync Output A reconstructed and phase-aligned version of the video Vsync. The polarity of this output can be controlled via a serial bus bit. The placement and duration in all modes is set by the graphics transmitter.
SOGOUT	Sync-On-Green Slicer Output This pin outputs either the signal from the Sync-on-Green slicer comparator or an unprocessed but delayed version of the Hsync input. See the Sync Processing Block Diagram to view how this pin is connected. (Note: Besides slicing off SOG, the output from this pin gets no other additional processing on the AD9985. Vsync separation is performed via the sync separator.)
SERIAL PORT (2-Wire)	
SDA	Serial Port Data I/O
SCL	Serial Port Data Clock
A0	Serial Port Address Input 1 For a full description of the 2-wire serial register and how it works, refer to the 2-wire serial control port section.
DATA OUTPUTS	
RED	Data Output, Red Channel
GREEN	Data Output, Green Channel
BLUE	Data Output, Blue Channel The main data outputs. Bit 7 is the MSB. The delay from pixel sampling time to output is fixed. When the sampling time is changed by adjusting the PHASE register, the output timing is shifted as well. The DATACK and HSOUT outputs are also moved, so the timing relationship among the signals is maintained. For exact timing information.
DATA CLOCK OUTPUT	
DATACK	Data Output Clock The main clock output signal used to strobe the output data and HSOUT into external logic. It is produced by the internal clock generator and is synchronous with the internal pixel sampling clock. When the sampling time is changed by adjusting the PHASE register, the output timing is shifted as well. The Data, DATACK, and HSOUT outputs are all moved, so the timing relationship among the signals is maintained.
INPUTS	
R_{AIN}	Analog Input for Red Channel
G_{AIN}	Analog Input for Green Channel
B_{AIN}	Analog Input for Blue Channel High impedance inputs that accept the Red, Green, and Blue channel graphics signals, respectively. (The three channels are identical, and can be used for any colors, but colors are assigned for convenient reference.) They accommodate input signals ranging from 0.5 V to 1.0 V full scale. Signals should be ac-coupled to these pins to support clamp operation.
HSYNC	Horizontal Sync Input This input receives a logic signal that establishes the horizontal timing reference and provides the frequency reference for pixel clock generation. The logic sense of this pin is controlled by serial Register 0EH Bit 6 (Hsync Polarity). Only the leading edge of Hsync is active; the trailing edge is ignored. When Hsync Polarity = 0, the falling edge of Hsync is used. When Hsync Polarity = 1, the rising edge is active. The input includes a Schmitt trigger for noise immunity, with a nominal input threshold of 1.5 V.
VSYNC	Vertical Sync Input The input for vertical sync.

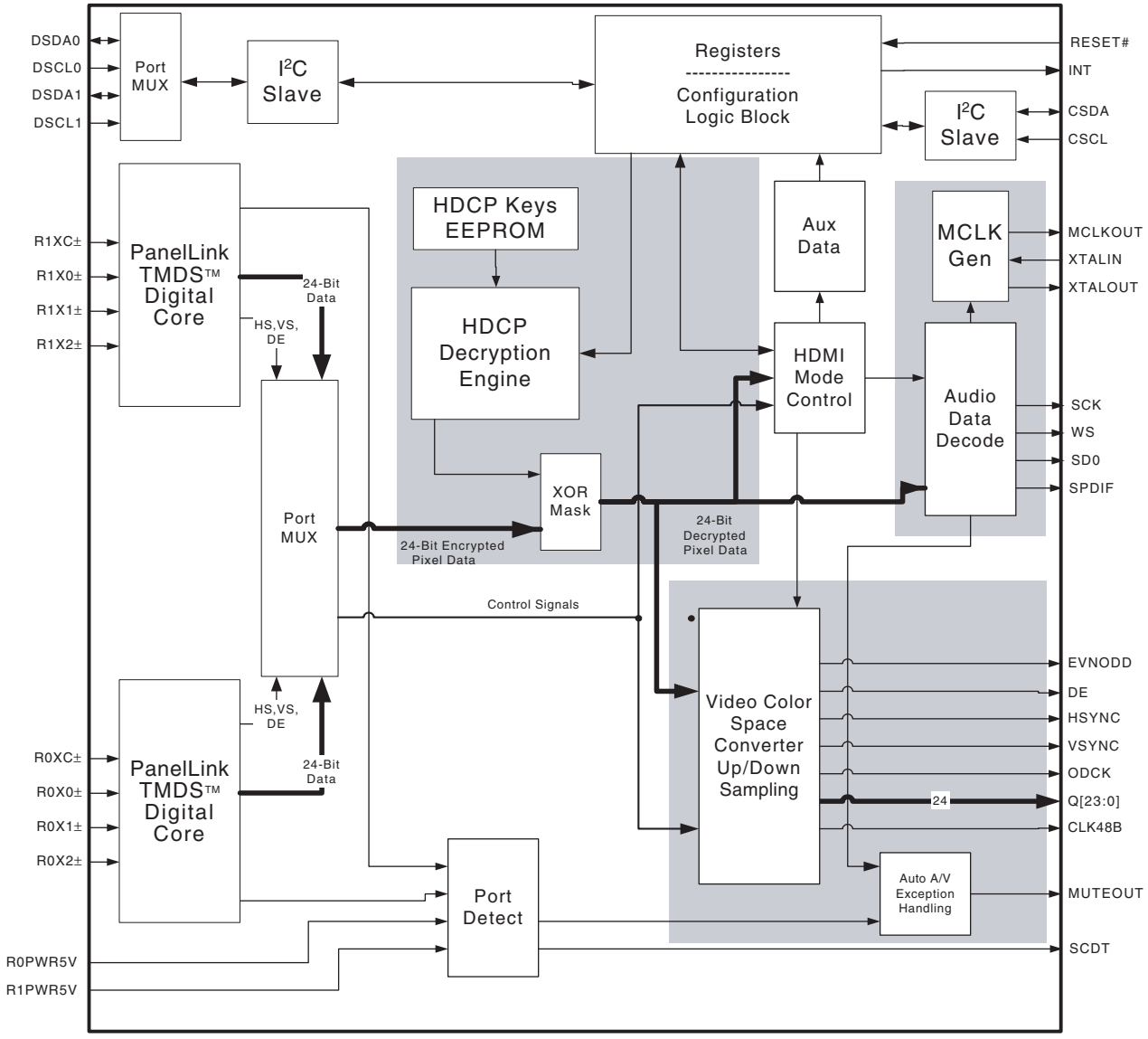
● Pin Function

Pin Name	Function
SOGIN	Sync-on-Green Input This input is provided to assist with processing signals with embedded sync, typically on the Green channel. The pin is connected to a high speed comparator with an internally generated threshold. The threshold level can be programmed in 10 mV steps to any voltage between 10 mV and 330 mV above the negative peak of the input signal. The default voltage threshold is 150 mV. When connected to an ac-coupled graphics signal with embedded sync, it will produce a noninverting digital output on SOGOUT. (This is usually a composite sync signal, containing both vertical and horizontal sync information that must be separated before passing the horizontal sync signal to Hsync.) When not used, this input should be left unconnected. For more details on this function and how it should be configured, refer to the Sync-on-Green section.
CLAMP	External Clamp Input This logic input may be used to define the time during which the input signal is clamped to ground. It should be exercised when the reference dc level is known to be present on the analog input channels, typically during the back porch of the graphics signal. The CLAMP pin is enabled by setting control bit Clamp Function to 1 (Register 0FH, Bit 7, default is 0). When disabled, this pin is ignored and the clamp timing is determined internally by counting a delay and duration from the trailing edge of the Hsync input. The logic sense of this pin is controlled by Clamp Polarity Register 0FH, Bit 6. When not used, this pin must be grounded and Clamp Function programmed to 0.
COAST	Clock Generator Coast Input (Optional) This input may be used to cause the pixel clock generator to stop synchronizing with Hsync and continue producing a clock at its current frequency and phase. This is useful when processing signals from sources that fail to produce horizontal sync pulses during the vertical interval. The COAST signal is generally not required for PC-generated signals. The logic sense of this pin is controlled by Coast Polarity (Register 0FH, Bit 3). When not used, this pin may be grounded and Coast Polarity programmed to 1, or tied HIGH (to V_D through a 10 k resistor) and Coast Polarity programmed to 0. Coast Polarity defaults to 1 at power-up.
REF BYPASS	Internal Reference BYPASS Bypass for the internal 1.25 V band gap reference. It should be connected to ground through a 0.1 μF capacitor. The absolute accuracy of this reference is ±4%, and the temperature coefficient is ±50 ppm, which is adequate for most AD9985 applications. If higher accuracy is required, an external reference may be employed instead.
MIDSCV	Midscale Voltage Reference BYPASS Bypass for the internal midscale voltage reference. It should be connected to ground through a 0.1 μF capacitor. The exact voltage varies with the gain setting of the Blue channel.
FILT	External Filter Connection For proper operation, the pixel clock generator PLL requires an external filter. Connect the filter shown in Figure to this pin. For optimal performance, minimize noise and parasitics on this node.
POWER SUPPLY	
V_D	Main Power Supply These pins supply power to the main elements of the circuit. They should be filtered and as quiet as possible.
V_{DD}	Digital Output Power Supply A large number of output pins (up to 25) switching at high speed (up to 110 MHz) generates a lot of power supply transients (noise). These supply pins are identified separately from the V_D pins so special care can be taken to minimize output noise transferred into the sensitive analog circuitry. If the AD9985 is interfacing with lower voltage logic, V_{DD} may be connected to a lower supply voltage (as low as 2.5 V) for compatibility.
PV_D	Clock Generator Power Supply The most sensitive portion of the AD9985 is the clock generation circuitry. These pins provide power to the clock PLL and help the user design for optimal performance. The designer should provide quiet, noise-free power to these pins.
GND	Ground The ground return for all circuitry on-chip. It is recommended that the AD9985 be assembled on a single solid ground plane, with careful attention given to ground current paths.

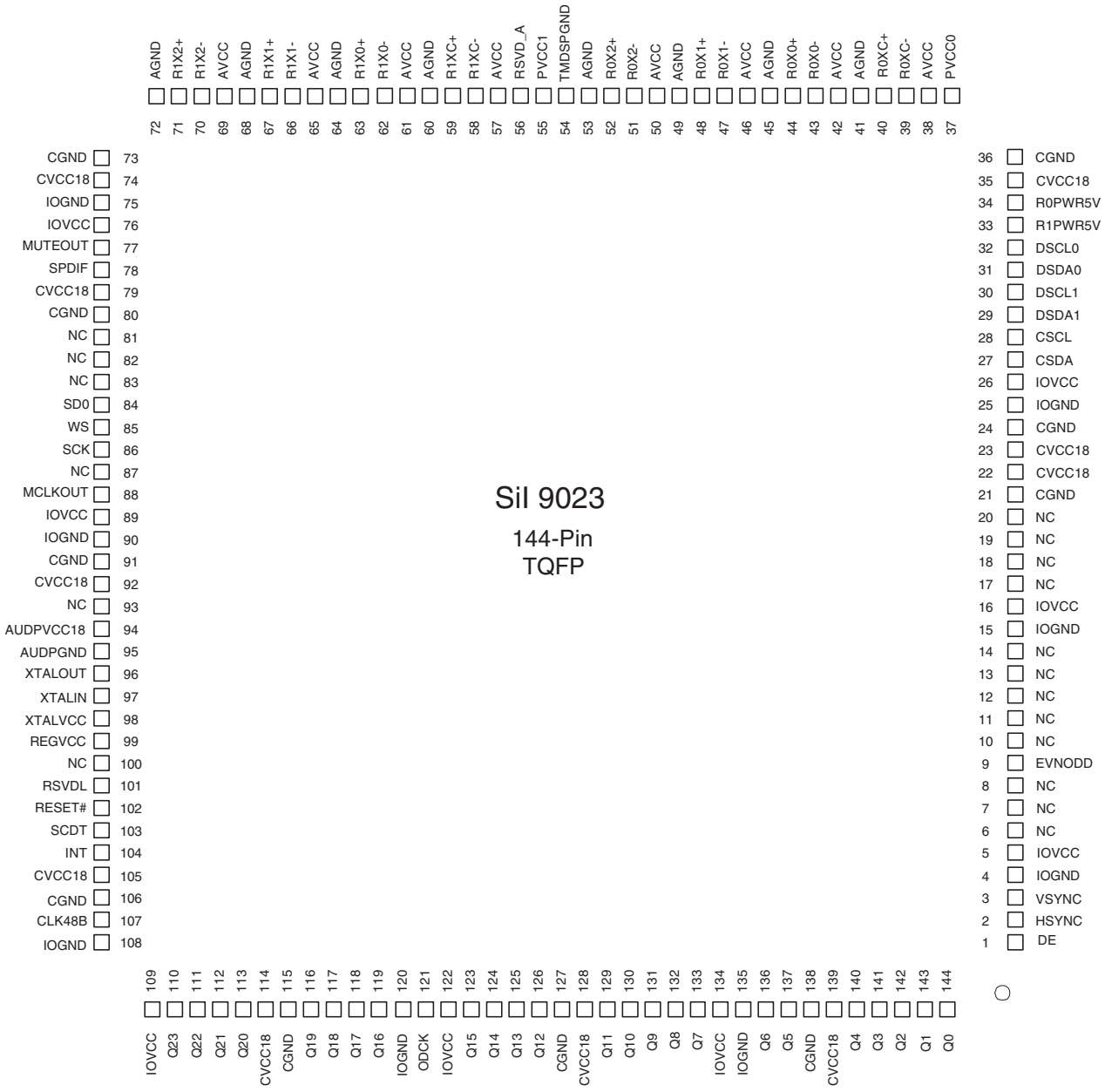
■ Sil9023CTU (MAIN ASSY : IC5401)

• **HDMI Rx**

● Block Diagram



● Pin Arrangement (Top View)



● **Pin Function**

Digital Video Output Pins

Pin Name	Pin #	Strength	Type	Dir	Description
Q0	144	8 mA	LVTTL	Output	24-bit Output Pixel Data Bus.
Q1	143		LVTTL	Output	
Q2	142		LVTTL	Output	
Q3	141		LVTTL	Output	
Q4	140		LVTTL	Output	
Q5	137		LVTTL	Output	
Q6	136		LVTTL	Output	
Q7	133		LVTTL	Output	
Q8	132		LVTTL	Output	
Q9	131		LVTTL	Output	
Q10	130		LVTTL	Output	
Q11	129		LVTTL	Output	
Q12	126		LVTTL	Output	
Q13	125		LVTTL	Output	
Q14	124		LVTTL	Output	
Q15	123		LVTTL	Output	
Q16	119		LVTTL	Output	
Q17	118		LVTTL	Output	
Q18	117		LVTTL	Output	
Q19	116		LVTTL	Output	
Q20	113		LVTTL	Output	
Q21	112		LVTTL	Output	
Q22	111		LVTTL	Output	
Q23	110		LVTTL	Output	
DE	1		LVTTL	Output	Data enable.
HSYNC	2		LVTTL	Output	Horizontal Sync Output control signal.
VSYNC	3		LVTTL	Output	Vertical Sync Output control signal.
ODCK	121	12 mA	LVTTL	Output	Output Data Clock.

● Pin Function

Digital Audio Output Pins

Pin Name	Pin #	Strength	Type	Dir	Description
XTALIN	97	—	LVTTL	In	Crystal Clock Input.
XTALOUT	96	—	LVTTL	Out	Crystal Clock Output.
MCLKOUT	88	8 mA	LVTTL	Out	Audio Master Clock Output.
SCK	86	4 mA	LVTTL	Out	I^2S Serial Clock Output.
WS	85	4 mA	LVTTL	Out	I^2S Word Select Output.
SD0	84	4 mA	LVTTL	Out	I^2S Serial Data Output.
SPDIF	78	4 mA	LVTTL	Out	S/PDIF Audio Output.
MUTEOUT	77	4 mA	LVTTL	Out	Mute Audio Output.

Configuration/Programming Pins

Pin Name	Pin #	Strength	Type	Dir	Description
INT	104	4 mA	LVTTL[1]	Out	Interrupt Output
RESET#	102	—	Schmitt	In	Reset Pin. Active LOW. 5V Tolerant.
DSCL0	32	—	Schmitt	In	DDC I^2C Clock for Port 0. 5V Tolerant.
DSDA0	31	4 mA	Schmitt	Bi-Di	DDC I^2C Data for Port 0. 5V Tolerant.
DSCL1	30	—	Schmitt	In	DDC I^2C Clock for Port 1. 5V Tolerant.
DSDA1	29	4 mA	Schmitt	Bi-Di	DDC I^2C Data for Port 1. 5V Tolerant.
CSCL	28	—	Schmitt	In	Configuration I^2C Clock. 5V Tolerant.
CSDA	27	4 mA	Schmitt	Bi-Di	Configuration I^2C Data. 5V Tolerant.
SCDT	103	12 mA	LVTTL	Out	Indicates active video at HDMI input port.
CLK48B	107	12 mA	LVTTL	Bi-Di	Data Bus Latch Enable. [2]
R0PWR5V	34	—	Schmitt	In	Port 0 Transmitter Detect. 5V Tolerant.
R1PWR5V	33	—	Schmitt	In	Port 1 Transmitter Detect. 5V Tolerant.
RSVDL	101	—	LVTTL	In	Reserved, must be tied LOW.
RSVD_A	56	—	—	—	Reserved Pin, leave unconnected.
NC	6,7,8,10,11,12,13,14,17,18,19,20,81,82,83,87,93,100	—	—	—	No internal connection.
EVNODD	9	8 mA	LVTTL	Out	Indicates Even or Odd field for interlaced formats. Polarity programmable in register.

Notes:
1. The INT pin is programmable as either a push-pull LVTTL output, or as an open-drain output.
2. CLK48B is used to clock external 24-to-48 bit latches. CLK48B is also latched on the rising edge of RESET# to set the I2C device addresses for CSCL/CSDA. Refer to Table 10. CLK48B has a weak internal pull-down, and so will be latched as a LOW if not otherwise connected.

● **Pin Function**

Differential Signal Data Pins

Pin Name	Pin #	Type	Description	
R0XC+	40	Analog	TMDS input clock pair.	HDMI Port 0
R0XC-	39	Analog		
R0X0+	44	Analog	TMDS input data pair.	
R0X0-	43	Analog		
R0X1+	48	Analog	TMDS input data pair.	
R0X1-	47	Analog		
R0X2+	52	Analog	TMDS input data pair.	
R0X2-	51	Analog		
R1XC+	59	Analog	TMDS input clock pair.	HDMI Port 1
R1XC-	58	Analog		
R1X0+	63	Analog	TMDS input data pair.	
R1X0-	62	Analog		
R1X1+	67	Analog	TMDS input data pair.	
R1X1-	66	Analog		
R1X2+	71	Analog	TMDS input data pair.	
R1X2-	70	Analog		

Power and Ground Pins

Pin Name	Pin #	Type	Description	Supply
CVCC18	22, 23, 35, 74, 79, 92, 105, 114, 128, 139	Power	Digital Logic VCC	1.8V
CGND	21, 24, 36, 73, 80, 91, 106, 115, 127, 138	Ground	Digital Logic GND	
IOVCC	5, 16, 26, 76, 89, 109, 122, 134	Power	Input/Output Pin VCC	3.3V
IOGND	4, 15, 25, 75, 90, 108, 120, 135	Ground	Input/Output Pin GND	
AVCC	38, 42, 46, 50, 57, 61, 65, 69	Power	TMDS Analog VCC	3.3V
AGND	41, 45, 49, 53, 60, 64, 68, 72	Ground	TMDS Analog GND	
PVCC0	37	Power	TMDS Port 0 PLL VCC	3.3V
PVCC1	55	Power	TMDS Port 1 PLL VCC	3.3V
TMDSPGND	54	Ground	TMDS PLL GND	
AUDPVCC18	94	Power	ACR PLL VCC	1.8V
AUDPGND	95	Ground	ACR PLL GND	
XTALVCC	98	Power	ACR PLL Crystal Input VCC	3.3V
REGVCC	99	Power	ACR PLL Regulator VCC	3.3V